COMMONWEALTH OF MASSACHUSETTS

Information Technology

A News Bulletin From The Executive Office For Administration & Finance, Information Technology Division

FULL TECHNOLOGY AGENDA FOR COMPTROLLER BENISON

After serving as Deputy comptroller for six years, Martin J. Benison was ready to hit the ground running when he was appointed Comptroller of the Commonwealth early last year. As he entered his new office, Mr. Benison and his staff faced a number of important projects, including an examination of operations at the Treasurer's Office, preparing for Y2K and implementation of a new statewide Human Resources and Compensation Management System (HR/CMS).

Only a few weeks after his appointment, news of trouble in the Treasurer's Office came out in the press. "One of my first tasks was to help form a task force in conjunction with the Treasurer and the Auditor," said Mr. Benison. "We took a look at how to improve systems and operations and made a number of recommendations, which are now in place." Some of those recommendations included improvements to the abandoned property payment functions of the office which are now done through MMARS, and moving the tax reporting function to the Office of the State Comptroller (OSC).

As the situation in the Treasurer's Office unfolded, Y2K was looming on the horizon and the HR/CMS implementation continued to move forward. Likening his new position to "jumping on a moving train", Mr. Benison said he was fortunate to have a strong and experienced team in place: commenting on existing Deputy Comptroller Elizabeth Kilcoyne and General Counsel Dave Marchand. With the addition of two new Deputy Comptrollers: Eric Berman (formerly Treasurer of the Water Pollution Abatement Trust) and Diane Ledwell (promoted from within the Comptrollers Office), Mr. Benison said the OSC was ready for these Information Technology challenges while continuing with the daily operations of the office.

"HR/CMS represents the implementation of the state's largest enterprise-wide application since 1988," said Mr. Benison. As reported in the Spring 1998 edition of the IT Bulletin, HR/CMS will update the Commonwealth's human resource and payroll systems. The technology and business function improvements implemented by the system will bring a number of improved benefits such as payroll direct deposit for Commonwealth employees and bi-weekly payroll. Conversion to the new system began in January and the first payroll payments were successfully made on February 18. (See related story on page 8.) "HR/CMS has been a tremendous joint effort and the results will positively impact business functions across the Commonwealth," said Mr. Benison.

While virtually all technology efforts have been focused on Y2K and HR/CMS for the past year, Mr. Benison said some other initiatives have continued. For example, OSC's VendorWeb has been enhanced to allow vendors to find out when their payments are scheduled via the web. Mr. Benison said the Comptroller's Office would continue to look at the internet for similar initiatives as a means for replacing paper to conduct business. One such area is the electronic distribution of pay stubs.

Under the current paper-based system, couriers must travel from all corners of the state to Boston to deliver paper pay stubs each week. Mr. Benison said he has asked the legislature for permission to deliver the pay

INFORMATION TECHNOLOGY BULLETIN VOL. 6 NO. 1, WINTER 2000

BEACON RELEASE 1.0 ROLLOUT A SUCCESS - RELEASE 2.0 NEXT

Welfare Reform in Massachusetts was given a large technological boost last year when the first phase of the much anticipated BEACON project was implemented by the Department of Transitional Assistance (DTA).

As reported in the Winter 1996 edition of the ITD Bulletin, BEACON (Benefit Eligibility and Control On-line Network) is an integrated client eligibility system that supports the public assistance programs administered by DTA. BEACON is replacing DTA's old fragmented legacy systems with a multi-tiered distributed client/server system that will assist caseworkers with eligibility determination, benefits coverage and program availability for welfare recipients.

Beginning with the issuance of the first Planning APD in 1992, the entire scope of the project has been impressive. DTA has 37 offices across the state. Each office is now equipped with a local area network (LAN) linking local office PCs to a Novell Network server for print and file services. The LANs are linked via routers to a frame relay, wide area network, which run over T1 lines to connect to DTA's data center in Boston.

The system architecture was designed for over 2,000 users and can support more than 150 transactions per second. The network includes over 2,600 PCs in the 37 locations. With the new system in place, DTA has already converted data from more than 1.5 million clients, 1.7 million Assistance Units, 37,000 overpayment obligations and 12,000 existing fraud referrals.

The rollout of Release 1.0 to every Transitional Assistance Office in Massachusetts was completed last spring. Release 1.0 included functionality to support DTA's Employment Services Program and Child Care Services as well as Accounts Receivable funtionality. When Release 2.0 is fully operational, BEACON will automate client eligibility, benefit determination, benefit issuance and provide financial management information control.

Before the successful implementation of Release 1.0, work on Release 2.0 had already begun. According to Assistant Commissioner for MIS Jim Reen, Release 2.0 of BEACON will be piloted in two phases. The first phase started in March and will pilot the system in 9 offices. Phase two will entail a full statewide parallel pilot by the end of the fiscal year. "The parallel pilot will allow our employees to obtain training and experience with their own caseloads before placing BEACON into production," said Mr. Reen.

When BEACON is deployed, it will create an "integrated, automated, eligibility determination and benefits calculation system," said BEACON Project Manager Steve Judge. He explained that the welfare system has many programs with different sets of rules. BEACON collects information for each client and then calculates and determines eligibility based on the various rules. "BEACON is a client/server based system that will help our caseworkers manage their caseloads without taking away

HIGHLIGHTS OF BEACON TECHNICAL DETAILS

Hardware: At its Central Office, DTA operates a data and network operations center which contains: an IBM RS/6000 Symmetrical Processing (SP) High Node Data Base Server with eight 112 MHz Reduced Instruction Set Chip (RISC) processors, 2 GB of Memory and 100 GB of disk storage; 9 IBM RS/6000 SP Thin Node Application Servers with one 120 MHz RISC processor, 1 GB of Memory and 18 GB of Disk Storage, as well as 2 Report Servers with the same configuration.

The Local Area Network (LAN) Servers (37 total) used for User Authentication and print services are IBM Netfinity 3500's and/or 5500's running Netware 4.11. The Desk Top Workstations are IBM 300GL PCs with a 500 MHz Pentium III processor, 256 MB of Memory and a 10 GB Hard Drive.

Software: The software for BEACON was coded by Albion International using the Forte Development Environment from Forte Software. Forte provided an end-to-end development environment that included transaction processing (TP), object request broker messaging (ORB), n-tier platform development capabilities, integrated instrumentation and a GUI builder.

BEACON production reports are written in Actuate, an enterprise class reporting environment from Actuate Software. Actuate consists of a desktop viewer and a report server with built-in security and scheduling.

Data Base Management Services are provided by ORACLE 8 from ORACLE Corporation.

Other Software: Other software components include IBM AIX Operating System for all RISC servers, Windows NT 4.0 for all Desk Tops and Outbound from Firesign Computer Company for file transfer to and from the Commonwealth's Enterprise Server located at MITC. The Commonwealth's Enterprise Server is used to both send and receive all BEACON Bridge and Interface files.

HRD CIO FOCUSES ON IMPROVING CUSTOMER SERVICES

Personnel Administrator James J. Hartnett, Jr. has made a strong commitment that the Human Resources Division (HRD) will become a more customer-focused organization. CIO John J. Shontell believes that Internet and Intranet technologies can help HRD to achieve this goal.

One of the Human Resources Division's goals is to create tightly integrated HR Internet and Intranet web sites for state employees, state HR staff, cities and towns and the public. These web sites will provide "one stop shopping" for the Commonwealth's internal and external HR users. In addition to providing static information, the web sites will provide interactive applications, which will help streamline HR operations and enable employees to be more self-sufficient participants in their HR programs. In effect, the web sites will redefine the way HRD provides services to its customers.

As an example, Mr. Shontell pointed to an Intranet site recently built for state agencies by HRD. WWW.HRD.STATE.MA.US provides information and services to the state's professional HR staff who are on the state's Massachusetts Government Network inside the state's firewall. The purpose of the site is to help the state's professional HR staff to perform their routine functions more efficiently and effectively; in effect, to "work smarter ". Although this is only a first step, the response to putting this information in people's hands has been great, according to Mr. Shontell.

Over the next year, HRD plans to streamline and reorganize a number of state civil service programs and provide enhanced information over the Internet. Currently, HRD provides a listing of scheduled civil service exams for viewing on its web site. In the future, Mr. Shontell envisions applicants registering for Civil Service exams over the Internet and having HRD provide test scores for applicants who type in their specific personal identification number (PIN).

In September 1998, HRD implemented a continuous testing program (ConTest) for selected non-public safety position titles used in state and municipal service. This program enables applicants in these titles to present their credentials and qualifications and be added to ongoing eligible lists on a daily basis. Currently, applicants apply for titles that require the possession of a license, registration or certification issued by a state/federal government agency. HRD plans to expand ConTest to include titles that require the administration of written examinations, to establish test sites at offices across the state and to use the Internet whenever possible to provide information and services to both applicants and the state agencies and municipalities with positions covered by civil service.

"Our goal is to use information technology as a tool to provide better service to all of our customers, " said Mr. Shontell. To effect real change will require interagency cooperation, he said. "It doesn't make sense to go it alone anymore. IT now makes it possible to provide coordinated services, and a growing number of decision-makers share the view that it does not matter who owns the application or where it resides as long as we can provide the best possible service to our customers."

He cited the implementation of HR/CMS as an example of agencies working together to improve government and make it more efficient. This large-scale implementation replaces the outdated Commonwealth Automated Payroll system (CAPS) and the Payroll/Personnel Management Information System (PMIS), and provides new functionality and data sharing across the Commonwealth to state human resources and payroll administrators. (See related stories on Page 1 and Page 8.)

"As we move forward, HRD wants to build on the track record of interagency cooperation and goodwill that was established during the HR/CMS implementation," said Mr. Shontell.

Mr. Shontell has been in state government for over 20 years. Prior to joining HRD 18 months ago, he held a number of positions in the Executive Office of Environmental Affairs and the Office of Consumer Affairs.
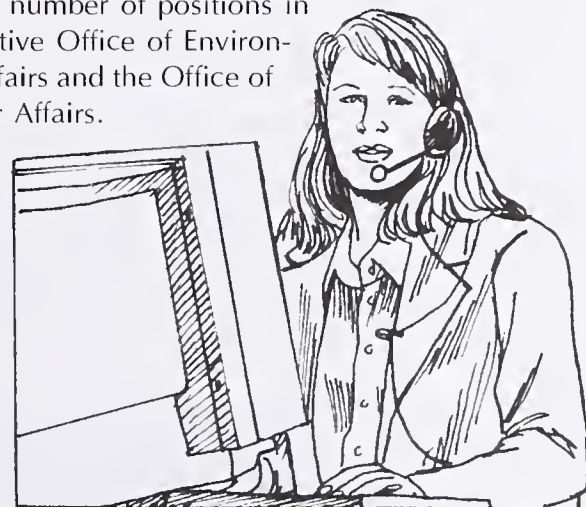
ESTABLISHING A LEGAL FRAMEWORK FOR ELECTRONIC COMMERCE

The advent of electronic commerce and wide spread use of information technologies throughout society has occasioned the need to update elements of state law on a uniform national basis. There is considerable uncertainty in several market sectors and areas of the economy regarding the legal status of electronic signatures and electronic contracts. Indeed, under the Massachusetts General Laws alone, there are over 4,000 requirements or references to writings and signatures.

The Information Technology Division (ITD) has drafted several versions of possible state legislation in this area since 1996, but ultimately has concluded that the problem requires a consistent legal framework at the state, national and international levels, because electronic commerce is multi-jurisdictional by nature. Over 40 states have enacted some form of electronic signature law to date. The inconsistencies and differing scopes of these laws have created a concern by many affected industries about impediments to interstate commerce.

THE UNIFORM ELECTRONIC TRANSACTIONS ACT

States have responded, with the support of industry, by drafting a uniform law for electronic transactions. This law, the Uniform Electronic Transactions Act (UETA), reported to states for enactment this past July, would affirm the legal status of electronic signatures, records and contracts and will provide a nationally consistent legal infrastructure supporting electronic commerce.

Under the UETA, parties can agree to use electronic records, signatures and contracts in the conduct of most transactions. In addition, the UETA gives specific legal guidance in several complex areas of law, such as notices and requirements for some writings to be delivered, posted or retained. The UETA is not, however, mandatory or prescriptive in its terms. As a result of this proposed legislation, parties remain free to choose any technology, implementation or business model – or free not to use electronic methods at all. There will be no question whether one party may later attempt to wrong-fully disclaim such a transaction on the sole ground that electronic methods were used.

The UETA is a non-regulatory, market-oriented and technology neutral law that would clear legal barriers to the use of electronic signatures and records, clarify the application of state contract and commercial law to e-commerce, and provide a consistent national legal base-line at the state level for the emerging global market. The UETA allows parties to agree upon the use of electronic records and electronic signatures between themselves in the conduct of an electronic transaction. The UETA is based upon best practices in existing state draft and enacted legislation in this area. In addition, the UETA has been carefully crafted to avoid creating conflicts or inconsistencies with other areas of state and federal law. A draft Massachusetts version of this act can be found at http://www.state.ma.us/itd/legal/index.htm.

FEDERAL LEGISLATION

Currently, several highly controversial and problematic bills are working their way through Congress that would preempt large tracts of existing state commerce and contract law. These bills are fueled by the existing irregularities in state e-commerce law. Specifically, the House Commerce Committee bill would present significant conflicts with state consumer protection law, the administration of state government IT, as well as the regulation of insurance, banks and securities dealers and brokers. The White House, consumer groups and states have voiced official opposition to some of these measures. Nonetheless, the political climate appears ripe for congressional action in apparent support of e-commerce despite the policy and legal problems with the existing bills. The National Governors' Association has prepared an issue brief that examines the federal legislation in more detail. The issue brief can be found at http://nga.org/Pubs/IssueBriefs/1999/990419FedDigitalSigs.asp.

The Commonwealth's administration is keeping a close eye on the progress of federal legislation that may have a preemptive effect on state laws. Meanwhile, work continues to finalize a Massachusetts version of the UETA. A decision regarding when to file this act for consideration by the legislature will likely be subject to the outcome of pending federal legislation.

Visit http://www.state.ma.us/itd/legal for more background information and for current status through the legislative process.

TECHNICAL RECRUITING IN A COMPETITIVE ENVIRONMENT

ITD Recruiter Spreading the Message that the Commonwealth is a Great Place to Work

In the emerging dot com world, Massachusetts companies are finding it increasingly difficult to attract qualified information technology experts. The Commonwealth of Massachusetts, one of the state's largest employers, is no different. In a world where network engineers and data base architects are hard to find, how does the Commonwealth compete? If you are the Information Technology Division, you hire a recruiter.

Last August, ITD hired Ellen Wright to recruit qualified candidates for positions at ITD. Ms. Wright has a lengthy background as a recruiter, having worked for a large Boston law firm for 17 years, as well as a recruiter for a number of high tech management consulting firms. As ITD's recruiter, Ms. Wright said she is helping to ease some of the burden on the Division's Human Resources Department whose focus has generally been centered on people after they have been hired, not before.

So how does ITD compete with all of the high tech firms and their stock options? Ms. Wright said one of her strongest marketing tools is the high retention level of employees in state government. "A lot of high tech companies have a high attrition rate. People can get burned out quickly by the dot com existence," she said. In contrast, the Commonwealth has a lot of stability. Many quality people stay in state agencies because they are comfortable with their jobs but they also feel challenged. "We have a good story to tell," said Ms. Wright.

ITD does not have the financial resources to put on an expensive marketing campaign and Ms. Wright still has to fight the perception that "you have to know someone to get a job here. We are trying to dispel that notion through our outreach and education," she said. "The bottom line is we are always looking for qualified people with strong technical skills."

Without a large marketing budget, Ms. Wright said that personal contact is the key to successful recruiting. "Many candidates are being pursued by up to a dozen other potential employers," she said. "We need to establish a connection quickly. We can't have a resume sit on a desk for a week." Timing is also important in determining the needs of the department. Rather than "plug holes" as they open up, Ms. Wright is trying to become pro-active by looking at the department's direction and forecasting future employment needs. In addition, Ms. Wright envisions working with other Commonwealth agencies to find qualified candidates and fill open positions. For example, Ms. Wright is currently involved in conducting a job search for a position at the Human Resources Division.

She is also trying to broaden the scope of ITD's recruitment efforts within the limits of its resources. Much of her time is spent searching through the thousands of job sites on the internet. She is also putting together a number of recruiting programs such as participating in job fairs, reaching out to college students and creating internship and career development programs for entry level employees.

"Sometimes we can compete with the private sector and sometimes we can't," said Ms. Wright. "But we are getting the message out that the Commonwealth is a great place to work and we are looking for good people who like to be challenged."

Over the past several years the Commonwealth of Massachusetts has made a tremendous effort to prepare for the Y2K challenge. On January 1st, the Year 2000 Program Management Office (Y2K PMO) and the Massachusetts Emergency Management Agency confirmed there were no significant problems to report in the Commonwealth's capability to deliver services. This could only have been achieved through the unflagging commitment, resourcefulness, hard work, and, at times, personal sacrifice of many dedicated personnel throughout the many agencies who participated in the Year 2000 Program.

On January 1st, the Millennium Rollover Weekend Reporting procedure, which required each agency to conduct operational tests of all key IT assets and report the results to the PMO, ran without a hitch. By 4:00 p.m. on January 1st, 96 % of the 170 agencies monitored by the Y2K PMO had reported their status. This represents an unprecedented level of coordinated cooperation among all branches of state government and quasi-public organizations. No major problems had occurred; none of the contingency plans had to be activated for any of the 170 agencies that reported, and all ten federally-funded programs were reported to be operational. Only two minor incidents were reported over the course of the day, and both problems were fixed by 5:00 p.m. January 1st. The Program Management Office activated the new web site on the morning of January 3rd and posted the clean sweep of rollover weekend reporting results.

TODAY, THE COMMONWEALTH OF MASSACHUSETTS' INFORMATION TECHNOLOGY INFRASTRUCTURE IS IN EXCELLENT CONDITION. THE YEAR 2000 PROGRAM PRODUCED MANY LONG-TERM BENEFITS FOR THE COMMONWEALTH.

Utilities were also in excellent shape over the Y2K weekend. On a normal Saturday between midnight and 12:30 a.m., about five million calls travel on Bell Atlantic's network. The number of calls during the first half-hour of the Year 2000 jumped to approximately 35 million without incident.

MasterCard International reported that card usage soared to 15.2 million transactions on New Year's Eve, which represents an increase of half a million over last year's volume. Of all financial institutions, only one internet-based credit card processor was found to have Y2K-related problems.

It should be noted, however, that there **were** Y2K incidents throughout the world:

- New Mexico was temporarily unable to issue driver's licenses.

- The Federal Aviation Administration suffered outages in a dozen wind shear monitoring systems throughout the US.

- The Department of Defense reported that its network of surveillance satellites was temporarily incapacitated.

- An internet-based processor of credit card transactions began generating duplicate charges.

- A court in Italy was closed due to errors in calculating prisoner's sentences.

- A video store in New York attempted to charge a customer a $91,000 late fee.

- Swedish kidney dialysis machines failed to initiate their automated equipment sterilization process, rendering them a contamination hazard.

Other such reports continue to appear occasionally. If it were not for the worldwide effort to head off such problems, these would clearly not have been the only significant events. And while it's not clear whether they would have been more serious, they would certainly have been far more numerous and potentially overwhelming.

The performance of the Commonwealth agencies represents the main benefit of the estimated Y2K remediation expenditure of about $103 million; this figure is about half of the amount spent by a typical business of comparable size, i.e., one with revenues of $20 billion. The total worldwide investment was estimated by the Gartner Group to be between $300 billion and $600 billion. In the United States alone, Y2K costs totaled between $150 billion to $225 billion.

Today, the Commonwealth of Massachusetts' Information Technology infrastructure is in excellent condition. The Year 2000 Program produced many long-term benefits for the Commonwealth. These benefits were realized not only in the traditional IT sections and departments, but also throughout organizations and across different levels and branches of government.

In the IT arena, improvements were made in inventory, infrastructure and architecture, staff experience and expertise, and project methodology. Each agency completed a full inventory of its electronic assets, in most cases for the first time. Today, agencies have an asset management tool that will enable them to more effectively manage their IT assets. Y2K has also spurred agencies to carry out deferred maintenance in the IT arena. Many outdated or obsolete systems within the Commonwealth have now been replaced, improving

THE YEAR 2000
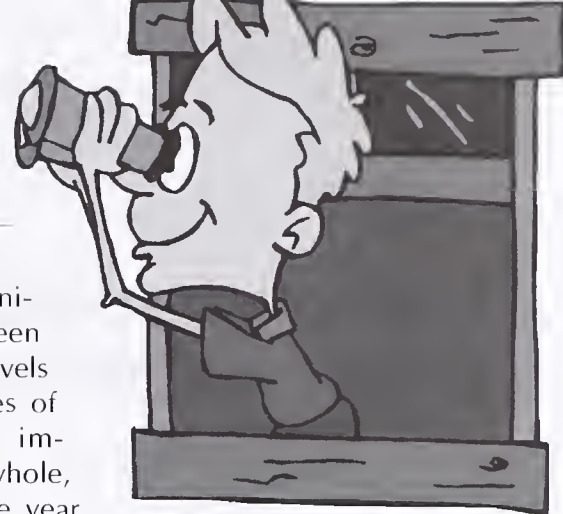
USER GROUP EVOLVES

Beginning on February 1, 2000, the Y2K User Group became re-constituted as the IT User Group. While agency Y2K coordinators are no longer required, senior technical staff from each agency comprises the new target audience – and in some cases these might be the same individuals. At the initial meeting, Jack Appelmans gave the final Y2K PMO report; Jerry Shereda described the Microsoft Exchange effort (see ITD Resources); Claudia Boldman described ITD's published standards; and Victoria Phillips of the Executive Office of Environmental Affairs described the systems in place or in development at the Environmental agencies.

These meetings will continue to occur on the first Tuesday of each month on the 21st floor at One Ashburton Place in Boston (McCormack state office building), from 9:00 until 11:00 a.m. It is expected that future meetings will provide information exchange between ITD and the technical staff from other agencies. For more information, contact Claudia.Boldman@state.ma.us or at 617-973-0857, or Ronald.Calabria@state.ma.us or at 617-973-0711 or see ITD's calendar at http://www.itd.state.ma.us/calendar.htm.

The communication between the various levels and branches of government improved as a whole, thanks to the year 2000 efforts. CIO's and SIO's from the Executive and Judicial branches met monthly to discuss progress, strategy and funding. Many of these executives are now participating in the CIO Roundtable hosted by the CIO of the Commonwealth, David Lewis. In addition, the Year 2000 Users Group initially set up to exchange information between Agency Y2K Coordinators is now undergoing a transformation and will continue as the IT Users Group, with continued participation by many of the same agencies. Within Secretariats, communication between IT and the business and between IT units in different agencies became more formalized and centralized. Finally, partnerships were created and formalized through outreach to the federal government, regulatory entities, other state agencies and municipalities. Overall, the sharing of information was enhanced within the agency, with business partners and with private entities, and this model of cooperation is now available for future IT initiatives.

their reliability. Production staff already report a drop in emergency support calls due to production outages. Many agencies also took the opportunity to establish standard equipment configurations. Such standard configurations streamline the maintenance of hardware and software in the future. Staff members increased their exposure to new development tools and techniques. As a result of taking on this challenge, the Commonwealth's IT staff now has a greater depth of knowledge and a broader range of expertise.

In addition, a great deal of process improvement has taken place throughout the Commonwealth as a direct result of the complexity of the Y2K challenge. Projects and teams have had to get better results with the same amount of resources. To that end a great deal of creative problem solving was used to identify optimum practices. These new, optimum methods are now being formalized and introduced into the agencies as standard practice.

Within organizations, the Year 2000 effort has improved the relationship between the IT groups and the business users. IT staff has a better understanding of the business functions and needs that it serves. Business users have a better understanding regarding the kind of solutions available to them in their own IT departments. Business management has increasingly recognized IT as a valuable corporate asset that exists to serve the agency missions and goals. Senior IT managers are being integrated into the regular business management and strategic planning activities of the agency. Each group now has a better understanding of the role and function of the other as well as critical interrelationships between the two groups.

Y2K Contingency Planning has fostered a better awareness of the need for improved and continued disaster preparedness strategies. Agencies examined current disaster response procedures, made changes to their plans, and trained their staff to use these plans. As a result, many agencies now have disaster recovery plans that are usable, flexible and broad enough in scope to cover many situations. Business continuity and contingency planning enhanced and extended the benefits of communications and cooperation achieved during Year 2000 remediation. Collaboration was required both as a result of agencies' technical interdependence, and by the recognition of the need to share expertise, resources and ideas in order to complete the work in the time available.

The Y2K PMO is very pleased by the performance of agencies and their supporting staffs in achieving such outstanding results. The hard work of the large number of business and information technology personnel involved in this program has clearly paid off. Thanks to everyone's efforts, the focus can now turn to increasing the efficient use of information technology, in order to serve citizens better, and to continue to improve the quality of life as the Commonwealth enters this New Millennium.

EXPANDED COMMONWEALTH COMMUNICATION, ENHANCED DATA SECURITY

The security of the state's computer systems — the integrity of its data — is the first order of business at the Information Technology Division (ITD). The information that moves over the Massachusetts Access to Government Network (MAGNet) is protected by several layers of Commonwealth security.

Now consider HR/CMS, the largest-ever statewide implementation. Some 250 users at the twenty-four state and community colleges and the Office of Higher Education are part of HR/CMS. How to maintain the integrity of the Commonwealth security system and provide these users secure access to HR/CMS and systems that hold the Commonwealth's financial, insurance, labor distribution, and reporting information was the issue.

The Solution: a virtual private network (VPN). Instead of a system of owned or leased lines (like MAGNet), a virtual private network makes use of the *public* infrastructure — the Internet — and maintains privacy through the use of tunneling protocols, encryption, and security procedures such as authentication and authorization.

The user at, for example, North Shore Community College (NSCC) in Danvers, has a small plastic card on which a number appears. Like a digital clock, this number changes every 60 seconds. When the user logs on to HR/CMS, she or he is asked to enter data in two important fields: user name (the Commonwealth user id) and password (the PIN and the token number that appears on the VPN card). The security system at the data center in Chelsea checks to assure the user ID is on file and associated with both the PIN and token number of the minute. Additionally, the data file is encrypted — a process through which a mathematical algorithm and coding transform and scramble the data at the point of origin and then unscramble or decrypt them at the other end. In effect, the private data travels through the Internet via a secure, private "tunnel."

When North Shore Community College volunteered to test the production database of HR/CMS in December, they also worked through initial problems associated with using the virtual private network. "At his point, using the VPN is pretty simple," comments Nancy Sherwood, IT Analyst at NSCC. "But you have to remember to have the card right in front of you when you are logging in so you can enter the number exactly as it appears at that moment." And then, of course, you have to store it safely away. "Here at NSCC our policy is to place the cards in a safe. Employees go to this safe every day to get the card and return it at the end of the day."

stubs electronically. "This is the type of system that will provide enhanced benefits to our employees and save the Commonwealth money," said Mr. Benison.

Other information technology projects that will be pursued with the implementation of HR/CMS include production of the E-Mall, a review of the old MMARS technology and the examination of delegated statewide payment systems. "We need to get into the thinking stage of these projects now," said Mr. Benison. "I have worked in this office since 1992 and the level of professionalism I have seen during that time makes me confident that we can move forward."

Prior to his tenure at Office of the State Comptroller, Mr. Benison was an analyst for the Legislature's House Com-

mittee on Ways and Means and served in the Executive Branch as Deputy Budget Director and then as Budget Director. He holds a B.A. in Economics from Boston College and a Masters Degree in Public Administration from Harvard University's John F. Kennedy School of Government. He serves on the National Association of State Auditors, Comptrollers and Treasurers (NASACT); Bond and Debt Committee and Task Force on the Financial Reporting Model. He is a Certified Government Financial Manager, a member of the Government Finance Officers Association and the Association of Government Accountants.

Mr. Benison volunteers his time as a coach with Reading Youth Hockey. He is married and has 3 children.

STATEWIDE NETWORKING IN MASSACHUSETTS STATE GOVERNMENT

There are some Massachusetts 'statewide' networks that are basically a particular agency's infrastructure to run their own applications to their offices scattered around the state. The term "statewide" is used to describe the network's footprint and points-of-presence throughout the state. Some such networks are in use at the Division of Employment and Training, the Registry of Motor Vehicles, and the Department of Revenue – to name a few.

There are other 'statewide' networks that were created to support a particular program. For example, the Office of the Secretary of the Commonwealth developed a network connecting the city and town clerks offices to support the Motor Voter program. This network does not support the other functions of the Secretary of State or of the city and town clerks offices – although consideration is being given to using this vehicle to support other agencies' needs to be connected to the city and town clerks.

The Criminal History Systems Board DataCenter maintains the Criminal Justice Information System (CJIS), a statewide network available to over 3,000 users in police departments and other criminal justice agencies. Online information available to certified users includes Registry information, courts disposition status, restraining orders and firearm licensing information. This information can be accessed from offices, barracks or police cruisers.

UMass recently developed a 'statewide' network called the Massachusetts Information Turnpike Initiative (MITI). This began in order to utilize the fiber optic cable laid across the state along the Mass Turnpike to provide cheaper inter-LATA service. MITI has used this backbone to connect not only all of its own campuses but also all of the state and community colleges. This network provides Internet access to the campuses, supports distance learning across campuses, and it will support advanced automation among the campus libraries. MITI will also be supporting the Massachusetts Community Network that plans to provide similar services to K – 12 schools. MITI may also be used by state agencies for secure statewide data networking and videoconferencing.

MAGNet, the Massachusetts Access to Government Network, is a shared 'statewide' network developed and maintained by ITD to connect state government sites in locations throughout all of Massachusetts. It provides WAN transport for email, and enterprise-wide directory services, as well as Internet access and firewall protection. MAGNet is standardized on the network protocol used in the Internet, TCP/IP. MAGNet is replacing the legacy SNA network that provided connectivity from all over the state to the IBM mainframe, originally located in the McCormack Building in Boston and subsequently relocated to the MITC (Massachusetts Information Technology Center) in Chelsea. Agencies are converting SNA networks to utilize LAN-connected desktop devices and the TCP/IP Routed Network. MAGNet thus enables agencies to access 'statewide' applications such as payroll and accounting systems running on the mainframe at MITC.

Most information technology professionals would agree with a few general statements about computer networking, such as:

◆ Computer networking – regardless of whether it's frame relay, wireless or whatever – is a utility, just like electricity, water or sewer service. It is part of the computing infrastructure, just like computer operating systems and security architectures.
◆ Rarely in this day and age is it necessary for a network to be application dependent. However, some classes of applications require predictable latency while other applications can tolerate the bursty transmission rates on the Internet.
◆ The lowest cost for connectivity is achieved through aggregation. Special network management is necessary to meet site-to-site bandwidth requirements in the aggregated environment.
◆ Network monitoring, particularly to the application level, is difficult and expensive.

Each 'statewide' network requires hardware, software and staff to keep it running. The cost of designing and managing a shared network is reduced for each user as more users share the network. However, in some instances, the expense of a special purpose statewide network may make sense. The Lottery is undoubtedly the best example of this scenario.

Now that the Year 2000 is here and Massachusetts state government has survived the crossover so elegantly, many agency business and technical managers will be able to address a wider spectrum of information technology issues than has been possible in recent times. With the recent explosion of Internet sites and applications, connectivity has become the prevailing information technology concern. With the advent of Virtual Private Networking (see ITD Resources) and the Massachusetts Community Network, as well as the rebid of the Custom Network Services Agreement, now may be a perfect time to address the enterprise issue of statewide computer networking.

EOHHS SYSTEM ENHANCEMENT

Executive Office of Health and Human Services Secretary William D. O'Leary outlined an aggressive work plan for the development of technological solutions to better serve consumers of human service programs. The EOHHS secretariat has 15 departments under its purview, with thousands of programs, serving over one million consumers with an aggregate expenditure level exceeding $8 billion.

"More than 30% of health and human service clients receive services from more than one agency. However, there is little standardized, consistent information sharing among agencies. As a result, families are not best served," O'Leary said. "This project is geared toward developing the systems to support the delivery of services and respond to the needs of clients by better coordinating, integrating and targeting services."

The technology plan is based on two fundamental concepts. First, policies, procedures and technology should blend together to create an overall infrastructure that allows for information sharing among agencies in order to promote a seamless service system. Second, data is utilized to monitor the performance and service gaps of existing programs in order to determine the most effective targeting of resources.

"ITD can play an important role in the development of technological tools to enhance the Commonwealth's service delivery system," said Chief Information Officer David Lewis. "I look forward to working with Secretary O'Leary and the HHS agencies on this initiative."

Evolution of the Common Client Index

The Common Client Index (CCI), the EOHHS computerized system, contains the most basic of information and its usefulness to casework is limited. Originally designed to determine those clients receiving services from multiple state agencies, CCI will be expanded and enhanced by including service need and service delivery data. With an enhanced system as a foundation, the Executive Office of Health & Human Services will pilot an initiative to target and track services to support high-risk children and their families. A major goal of the pilot will be better coordination of case management services through monitoring and integration of information and services.

In addition to better servicing and tracking of individual cases, this system enhancement will allow for the creation of automated tools that can be shared throughout the secretariat and the Commonwealth's communities. A **Resource Locator** will allow Internet users to view a list of health and human services programs, including state and local services. This feature will be valuable to consumers as well as educators, clergy and advocates who may need to assist a family in learning the kind of services available within their communities. Users will be able to find resources by various criteria such as age, service type and location. The second tool to be developed, an **Eligibility Wizard** will allow Internet users to determine potential eligibility for state programs. By providing specific pieces of information, an individual will receive a report that will inform them of their eligibility as well as to the next steps required to receive services. The **Referral Mechanism** will provide the ability to enter information about a potential client. By being linked to other systems including the resource locator, eligibility determination and case monitoring system, this feature will allow information to be routed to appropriate service providers.

the flexibility they need," said Mr. Judge.

For example, BEACON will automatically alert case workers to significant date-related events pending for a particular client. BEACON can also provide real time views that give the case worker the most up-to-date client information available. Ease of use is also an important feature. BEACON is a Windows based system that provides a wealth of information with a point and a click. Help screens are available, as well as access to on-line policies and procedures. A Data Warehouse has been implemented and will be expanded with the rollout of Release 2. Using this Data Warehouse, BEACON is also able, via CommBridge, to provide matches with other state agencies such as the Registry of Motor Vehicles and Department of Revenue.

"BEACON is changing the way we manage our business by giving case workers the tools they need to do their jobs," concluded Mr. Reen.

ITD RESOURCES

COMMUNICATIONS SERVICES: VPN CONTRACT

ITD has recently signed a contract with Bell Atlantic to provide a suite of Remote Access and Virtual Private Networking (VPN) services to all Commonwealth agencies through a Master Service Agreement meeting the varied needs of the Commonwealth's enterprise. The remote access solution will be completely outsourced, with Bell Atlantic supplying and managing all equipment, software, and services, including any located at ITD. Participating agencies will remotely administer their user access lists, regardless of the directory site.

ITD began a small pilot in February. Once the pilot is concluded, ITD will publish the contract information and have a kick-off meeting with the vendor for interested agencies. The VPN is expected to be available to all state agencies and Commonwealth business partners beginning in March. ITD is also planning to have a link on its Intranet site for the VPN; this site will include information on pricing and implementation. For more information on this contract, contact Kevin Sullivan at Kevin.Sullivan@state.ma.us or at 617-973-0745.

ENTERPRISE APPLICATIONS BUREAU (EAB) SERVICES

An **HR/CMS Help Desk** has been established with the goal of resolving problems on the first call, while providing courteous and reliable service. Callers' problems and questions, both application-orientated and technical, will be resolved by this front line group or referred to subject matter experts. The new organization, led by Bethann Foster, is a subset of ITD's current help desk, CommonHelp, directed by Sandy Kruczkowski. The Help Desk will be staffed by ITD resources and will also be handling questions about the Commonwealth Information Warehouse.

Users can contact the Help Desk at 1-800-335-4702 (press 1) or at HRCMSHelpDesk@itd.state.ma.us. It is available Monday through Friday from 8:00 a.m. to 6:00 p.m. and during the HR/CMS implementation period, on Saturday from 9:00 a.m. until noon. Callers should be prepared with the name of the panel in use, a description of the problem, and the user's Universal Access ID (UAID).

Intranet Site Redesign: EAB's Web Services Group has re-designed and re-organized ITD's Intranet site. With a new streamlined look and feel, the site was designed to improve communication and provide better service to the ITD user community. Topics such as "Job Opportunities", Services, "Calendar", "Forms", "Publications", and "Projects" are now located at the high level page with highlights of "What's New" at ITD. The goal is to continually add and modify content, keeping the site current with ITD updates. For more information about the site, log on to www.itd.state.ma.us

STRATEGIC PLANNING GROUP (SPG) SERVICES

New Web Accessibility Standards have been developed and published through the efforts of the group of state webmasters who assisted SPG staff in drafting these standards. The standards will be incorporated into the Commonwealth's IT Architecture and Enterprise Standards, HTML Authoring and Web Publishing section, and can be viewed at http://www.state.ma.us/itd/standard/ArchStan.htm#HTMLAuth

The **Hostnames and the Commonwealth Internet Domain Name Service (DNS) Strategic Directions** document has been revised. Version 1.1 issued 1/24/99 addresses the use of hostnames outside the <state.ma.us> domain by state agencies. The revised Strategic Directions document can be found at http://www.state.ma.us/itd/onlinegovt/publisheddocuments.htm

Enterprise Messaging: While the Commonwealth of Massachusetts is a world-class enterprise with 171 agencies, 77,000 employees and an annual budget of $20 billion, its messaging system is not at the same level. The state currently processes 50,000 messages per day for 33,000 users across five disparate email systems, including Banyan, cc:Mail, GroupWise, DEC and Microsoft Exchange.

ITD has asked Microsoft to analyze the entire messaging environment and compare it to other world-class organizations. Their first recommendation is to create one Exchange site for each branch of government: Legislative, Judicial and Executive. Currently, Massachusetts has 57 Exchange sites for one-third of its email users. Fewer sites will improve manageability and reduce labor and equipment investments. ITD plans to build a central Exchange site for Commonwealth messaging, providing a resource into which Banyan users can migrate and into which separate Exchange sites can be melded. This approach will produce better service and reduce costs. ITD will need help from all agencies to define their business requirements and to calculate the current costs of messaging in the Commonwealth. For more information, please contact Jerry.Shereda@state.ma.us or at 617-973-0814.

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If any part of the address on this newsletter is incorrect, mark the changes on a photocopy and send or fax the copy using the information in the upper left.

A MESSAGE FROM THE CIO

We had a great Y2K rollover weekend and achieved our goal of business as usual. This was the direct result of all of the preparation, execution and diligence of each of you and of state government as a whole. Success in events such as this – where they're really isn't a second chance – is all about these three things. It was nerve racking and time consuming, but the sense of satisfaction from a job extremely well done is always the best reward. People should take great pride in this achievement.

Even for those of us who did not expect the problems that had been forecast, the dearth of problems was still rather amazing. I am sure many of you have been asked if half of the time, labor and money was necessary; if Y2K wasn't just a big rip-off. I think all of us know what a disaster it would have been if we had done nothing, and I would encourage you to say so.   Having done such a great job, we may have raised expectations about how quickly and well we can get things done.

I congratulate and thank you! And, while we have cleared the major hurdle, we are not all the way home yet. So keep up the good work that got us to where we are.

David Lewis

InformationTechnology

A News Bulletin From The Executive Office For Administration & Finance, Information Technology Division

LIEUTENANT GOVERNOR SWIFT CHAMPIONS PRIVACY LEGISLATION

Following her swearing in as Lieutenant Governor, Jane Swift chaired the transition team for the Cellucci-Swift Administration. Privacy was raised as a major concern during the transition period. On June 23, 1999, Lieutenant Governor Swift filed sweeping legislation that will protect the privacy of children by restricting access to their personal information and preventing molesters and kidnappers from using this information to zero in on potential child victims. The bill titled "An Act Relative to a Consumer's Right to Privacy" also allows Massachusetts residents to find out who is collecting information about them, how it is being used and how to best protect themselves against these invasions of privacy.

The Cellucci-Swift legislation restricts the information that can be gathered or released on children. "Children are especially vulnerable to criminals who easily access their detailed personal information," said Swift. "With our bill, no information will be collected on children without the consent of their parents." The bill also requires information agencies to provide parents and guardians with any information or report they have provided concerning their child, along with the person to whom the information was sent.

The privacy bill establishes both civil and criminal penalties for violations of any of the provisions and also allows aggrieved consumers to sue for damages, court costs and attorney's fees. Highlights of other protections afforded by the bill include:

- Requires data collectors to provide individuals access to the data they have about them and to notify consumers whenever the information is sold.

- Prohibits retailers or credit card issuers from collecting or selling personal information without affirmative consent ("opt-in") and provides consumers with easier methods to "opt-out" of lists.

- Restricts cable television companies from selling or disseminating viewing records.

- Strengthens the current identity theft law.

- Prevents Internet service providers from selling or sharing their customer's personal information and/or browsing records without the customer's express consent.

- Clarifies existing eavesdropping statute to cover cellular, digital and cordless phones and pagers.

- Requires employers to post company surveillance policies, including specific areas in which employees will be electronically monitored.

- Bans the hiring of inmates by information gathering agencies for data processing.

- Prohibits retailers or merchants from requiring consumers to provide a social security number to complete a transaction.

- Stops non-law enforcement personnel from conducting lie detector tests through voice patterns without the participant's informed consent.

- Prevents any organization from collecting biometric identifiers (DNA, fingerprints, retinal scans, etc.) without the individual's consent and prohibits the dissemination of these identifiers without consent.

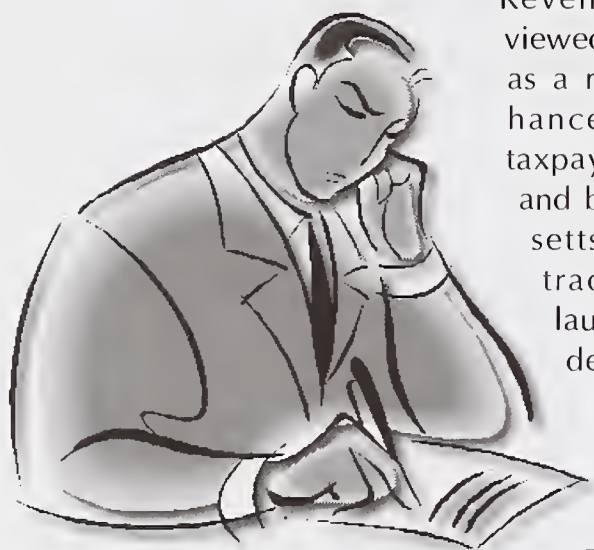- Prohibits the state Registry of Motor Vehicles from selling personal information.

Lt. Governor Swift also issued Executive Order Number 412 requiring all state agencies to examine their

INFORMATION TECHNOLOGY BULLETIN VOL. 6 NO. 2, SPRING 2000

DEPARTMENT OF REVENUE CONNECTS WITH BUSINESS

The Massachusetts Department of Revenue (DOR) has long viewed the World Wide Web as a means of providing enhanced service to the taxpayers, tax professionals, and businesses of Massachusetts. In continuing this tradition, DOR has launched a new Web site designed specifically to meet the needs of the Commonwealth's business community: the Bay State Business Connection— **www.baystatebiz.com**.

Initially, the Bay State Business Connection will be geared towards small and medium-sized businesses, new businesses, and businesses considering locating in Massachusetts. But it will be enlarged and enhanced over time to provide services for large businesses too.

At this Web site, businesses can now:

- Register or update their TA-1 (trustee tax) registrations online;
- Download free software for filing sales and withholding tax returns via personal computer;
- Locate information, forms and guides on taxes, unemployment insurance, workers' compensation, child support, business regulations, economic development resources, and much more.

"There are numerous requirements that state government places on businesses, and they can be complex and time-consuming. With the Bay State Business Connection, I hope to make it easier for businesses to understand and meet their obligations. The Bay State Business Connection provides information from a variety of sources in one place and enables firms to do more of their business with us online, 24 hours a day, 7 days a week," commented Revenue Commissioner Frederick A. Laskey.

Point and click sections on the site include:

- **Starting a Business** – Find out what you need to know about starting and running a business in Massachusetts.

- **Online Registration for Taxes** – Register to collect and pay withholding, sales/use, other "trustee" taxes and certain excise taxes.

- **PC File for Business Taxes** – Download software for filing your sales/use and withholding tax returns with DOR.

- **Join DOR's Mailing List** – Receive public written statements and legal updates from DOR by e-mail.

- **Report New Hires** – Find out about the Massachusetts Employer Reporting System – an important employer requirement.

- **Household Employment Tax Guide** – Find out what your Federal and State obligations are when hiring household help.

The Department plans to add much more to the Web site in the weeks and months to come, including customized online account management tools and, in collaboration with the Division of Employment and Training, "Singe File" — online consolidated filing of state unemployment, wage reporting, withholding and W-2s. Commissioner Laskey urges people to visit the site and tell him, by completing an online survey, how he can improve it.

CONSUMER AFFAIRS CIO HAS DIVERSE AGENCY AND AGENDA

Photo by Jerry Shereda

Tim Healy has served as the CIO for the Office of Consumer Affairs and Business Regulation for the past year. In that capacity, he oversees the technical infrastructure and IT programs for the Commonwealth's consumer watchdog agency. Consumer Affairs oversees nine agencies that are charged with educating, informing and protecting consumers. These agencies include the Alcoholic Beverages Control Commission, the Board of Registration in Medicine, the Department of Telecommunications and Energy, the Division of Energy Resources, the Division of Banks, the Division of Insurance, the Division of Registration, the Division of Standards and the State Racing Commission.

"The Office of Consumer Affairs and its agencies on a daily basis play an important role in safe guarding and protecting the welfare of the citizens of the Commonwealth. We conduct business with four million customers annually. Consumer Affairs' customers are a diverse group which includes doctors, plumbers, liquor establishments, utility companies, accountants, electricians, etc. and the consumers of all these businesses and professionals." said Mr. Healy.

Making interactions easier for consumers and businesses is one of Mr. Healy's goals. For example, among Consumer Affairs' four million customers, over 600,000 are licensees who are issued licenses by eight of the nine agencies. Consumer Affairs is now in the process of establishing a licensing and complaint tracking database that can be customized for the needs of the individual agencies. "Information is our greatest corporate asset. By utilizing a common system we will not only be streamlining and consolidating the tracking and licensing systems used within the agencies but at the same time we will be installing a powerful tool for the collection and dissemination of information. This system will serve as the foundation or the primary data source for the majority of the projects that we undertake in the next few years. We will be developing a number of systems whose primary function will serve as vehicles for the inputting or retrieving of data from the licensing system."

"Many of the ways that we do business today will be transformed by the Internet" according to Mr. Healy. Prior to taking his current position Mr. Healy was the IT Director for the Division of Registration. One of the projects Mr. Healy completed while at the agency was the construction of an extensive web site, http://www.state.ma.us/reg, which allows consumers and licensees to obtain the most up to date licensing information and the ability to perform transactions. Mr. Healy points to the Registration web site as an example of how technology can help expand customer service and empower the customer. "We have all seen how the power of the Internet has allowed customers to get at information beyond the normal business hours of 9 to 5. We believe that using the right technology, in the right environment, that customers should be provided the freedom and responsibility to manage certain aspects of their accounts via the Internet. This might include the updating of renewal information, payment of renewal fees, address changes, and other transactions. We do not want to be in the data entry business but rather focus our attention on the data validation and authorization components of the transaction. This will benefit not only the customer who will be empowered to perform the transaction but also free up valuable staff time to perform other tasks. Mr. Healy said there are a number of other projects on the horizon that focus on making government more accessible. One such initiative will establish a secretariat-wide Intranet. This would allow the divisions to cut down on paper work and share basic information such as human resource forms electronically. Another project involves a pilot program that would equip licensing inspectors and investigators with pocket_ PCs. With this equipment, staff will be able to check vital information and file their reports online while still in the field. The Division of Insurance is piloting an electronic renewal system that will ultimately be transformed into an on-line Internet application. The Division of Registration is also examining proactive steps that utilize the Internet to provide information to license holders such as renewal date alerts and the acknowledgment of fee payments.

"We do not want nor can we afford to be in the business of developing and supporting individual systems. Where applicable we want to leverage the technology already developed in another Consumer Affairs agency or other state agency. Our goal in all of these projects is not just to use Information Technology, but to use it smartly to improve the lives of consumers, businesses and employees," said Mr. Healy. "We want to provide timely and accurate information and let people get that information when they need it. My challenge is getting people from the agencies that already have a tremendous amount of tasks and challenges to look at the big picture. But there are a lot of great people who work well together to identify common needs and problems. Cooperation ultimately benefits everyone."

CAMIS WILL TRACK STATE ASSETS ELECTRONICALLY

Undoubtedly the largest owner of real estate in the Commonwealth of Massachusetts is state government itself. The state owns over 5,000 buildings and 77 million square feet of space. The Division of Capital Asset Management (DCAM) is responsible for major capital projects in state buildings and the general oversight of the Commonwealth's real estate. The Department of Environmental Management (DEM) is the state's largest land owner. Individual state agencies are responsible for managing the day to day operations of buildings and other real estate used by the state agencies.

In 1999 the Massachusetts legislature authorized a major new initiative to manage the state's real estate, appropriating funds to conduct a comprehensive condition survey of the state's capital assets and to procure a software package to manage the collected data. As a result, DCAM has implemented the Comprehensive Asset Management Information System (CAMIS) program, including the CAMIS survey and the CAMIS software.

The engineering firm Parsons Brickenhoff will conduct a survey of all state owned buildings. All major building information and systems, including areas such as mechanical and electrical rooms, labs, food service areas, HVAC systems, roofs and windows, will be assessed and catalogued.

The survey will note deficiencies, capital needs, and ordinary maintenance schedules for each building.

The key to keeping track of all this data is the new CAMIS software, which will be housed at the Commonwealth's computer operations center. DCAM was able to purchase an off-the-shelf software package from Prism Computer. Once it is installed, the CAMIS software will be an invaluable maintenance management tool to agency facility and budget staff. The surveyors will be able to input their findings through the state's intranet, and facility managers will then utilize the data to help run their facilities more efficiently.

Access to this data will help optimize operations at each facility by allowing managers to develop better planning and spending recommendations. For example, the new software will help facility managers track and schedule upcoming maintenance and equipment purchases. The software will also allow DCAM and DEM to make more accurate capital planning and spending recommendations for all of their facilities and land across the Commonwealth.

The new software will be operational by June, 2000. The surveys will be completed early in 2001.
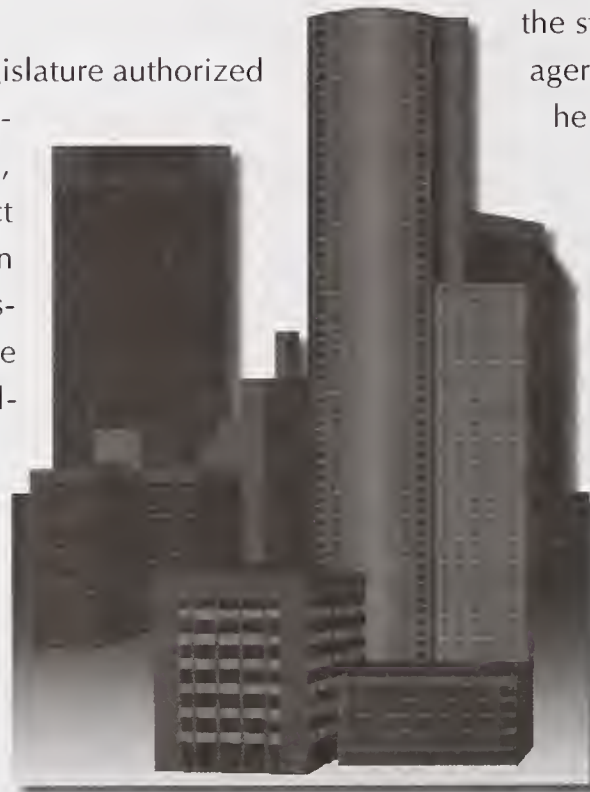
INFORMATION TECHNOLOGY INVESTMENT PLANNING

In mid-April, CIO David Lewis sent a letter to all Cabinet Secretaries, Agency Heads, Constitutional Offices, Judiciary, Colleges and Universities on the subject of information technology investment planning. In this letter, CIO Lewis reviewed work that has been under way for the past four months with the agency and secretariat CIO's to develop an integrated IT investment planning process, partially intended to comply with mandated investment oversight responsibilities assigned to the Commonwealth CIO. Mr. Lewis' major objective in instituting an investment planning methodology is to ensure a good understanding of how IT investments advance the priorities and objectives of the Governor, Legislature and other Constitutional Offices, as well as individual agency business objectives. Since the Investment Briefs are about using information technology to implement business plans, they will become part of the operational budget planning process with the Fiscal Affairs Division as well as ITD.

This integrated IT investment planning began with Strategic Planning Liaisons distributing to all agency and secretariat CIOs a package called the IT Investment Brief (see http://www.state.ma.us/itd/liaisons.htm). The Investment Brief will become the basis for prioritizing funding and for establishing metrics that will be used to measure the projects' success. Mr. Lewis requested support in having this planning process completed during May. The early date was targeted to allow ITD to provide bond and other ITD controlled funds to selected projects as early in fiscal 2001 as possible – hopefully in early July.

This year in support of the Commonwealth Online Government Strategic Agenda, Mr. Lewis is emphasizing support for projects that:

(1) Improve interactions between government and business;

(2) Improve interactions between government and citizens; and

(3) Improve the efficiency and effectiveness of government operations.

An example of a government to business project is the Single File online application being jointly developed by DOR and DET (see the DOR Connects With Business story). This project will improve the accessibility of government to business, and simplify these interactions by combining the requirements of both agencies (sales, withholding and unemployment tax filings) into one electronic interface.

Since this is the first full-scale attempt to construct a comprehensive statewide plan for IT investment, Mr. Lewis chose to limit the full exercise to Executive Branch Agencies for this year. The actual agency applicability is as follows:

Executive Agencies	Total IT Spending
UMass, Higher Ed., Dept. of Education	Projects with ITD Funding
Constitutional Offices	Projects with ITD Funding
Judiciary	Projects with ITD Funding

ITD Strategic Planning Liaisons began this effort by working with agency and secretariat CIO's and their teams. Commonwealth CIO Lewis promised to provide the maximum amount of support to minimize disruptions to current agency and secretariat priorities. Upon completion of the planning process, Mr. Lewis will provide feedback on overall themes and solutions.

ENTERPRISE

VIRTUAL PRIVATE NETWORKS

Virtual Private Networks (VPN) use the public Internet for private access to an enterprise's databases. VPNs are appealing to Commonwealth agencies as a way to provide secure remote access to applications inside the network perimeter firewall from employees working in the field or at home and from trusted business partners. VPNs are cost competitive with dial-up services while providing faster communication anytime, anywhere, 24 by 7, from any PC with VPN client software, with a high degree of authentication and transmission secure against interception. In addition, agencies that decide to use VPNs are encouraged to upgrade the registration of business partners, employees, and other subscribers when they are given VPN access accounts. The VPN technical architecture is designed to use secure policies for connectivity to agency applications.

The Commonwealth's VPN service is provided by a contract awarded in February to Bell Atlantic to provide a managed VPN service for agencies, authorities, and other organizations qualified to procure services using Commonwealth contracts. A VPN Pilot project with Bell Atlantic is in progress in the Information Technology Division's Communications Services Bureau to integrate Bell Atlantic's managed VPN service and the Commonwealth's TCP/IP Routed Network in the Massachusetts Access To Government Network (MAGNet). Bell Atlantic assigned a special VPN Account Team to assist Commonwealth organizations that decide to use the VPN service. General availability of the Commonwealth's VPN service is scheduled for July 1, 2000.

Authorized VPN data communication sessions are achieved by installing a VPN client on each qualified VPN subscriber's desktop computer, workstation, or mobile laptop. Once installed, every VPN subscriber is authenticated when a data communications session is initiated. People using the Internet that are not registered in advance with the Commonwealth will not be authenticated and are consequently denied access.

The VPN client encrypts each data communication session. The IPSec standard, which meets all defense department encryption requirements, is used for encryption. Encrypted data communication sessions are then decrypted by a VPN Gateway, which is installed on the

Commonwealth's TCP/IP Routed Network in MAGNet. The VPN Gateway directs data communication sessions to the network IP address where the agency's application server is connected. Bell Atlantic's managed VPN service operates all the data communications equipment from the VPN subscriber's connection to the VPN Gateway, including a Help Desk to resolve VPN connectivity problems.

The VPN subscriber can only go to the network IP addresses granted during advance registration. For business partners, the network IP address is where the agency application is located. For Commonwealth employees, the network IP address assigned for telecommuting is the same as the network IP address at their desktop local area network (LAN) at their office. In all cases, agency application managers must determine that application security procedures are adequate to meet their access restrictions. A review of application security procedures is a key agency requirement when setting up VPN groups. Another key security consideration is to replace all dial-in remote access servers with the VPN service.

Employees from five Commonwealth agencies, along with other employees representing two business groups, agreed to participate in the VPN Pilot. Agency groups participating in the VPN Pilot are from the Registry of Motor Vehicles, Tax Collectors, HR/CMS personnel system, Environmental Affairs, and Executive Branch agencies supported by the Central Business Office. Bell Atlantic's VPN service supports all data transport methods; included in the VPN Pilot are 56 Kbps dial-up modems, Digital Subscriber Lines (DSL), cable modems, and Individual Service Delivery Networks (ISDN). The default Internet Service Provider (ISP) is Bell Atlantic; however, other ISPs can be used to connect to the VPN. Other ISP's included in the VPN Pilot are MediaOne, AT&T WorldNet, and several other ISPs. America OnLine (AOL) is technically not compatible with the Bell Atlantic VPN service.

Analysis of the VPN Pilot trials, evaluation summaries, case studies, and other information learned in the VPN Pilot will be published as soon as available. The VPN Pilot trials are scheduled to run during June 2000. More information on the VPN Pilot project is on the ITD Intranet web page at www.itd.state.ma.us. Or, contact Dan Harp, VPN Pilot Project Manager, at (617) 973-0067 or at daniel.harp@state.ma.us

RESOURCES

MASSMAIL

The Commonwealth of Massachusetts, Information Technology Division (ITD) has partnered with Microsoft to design and implement a new centrally administered enterprise wide authentication and messaging system using Windows 2000 Active Directory (AD) and Exchange 2000. ITD is offering these new centralized services to all agencies to help reduce the total cost of ownership of messaging, while also creating an enterprise Windows 2000 computing infrastructure that agencies can leverage and use to add value to the existing IT services they provide to their users.

A website on the Commonwealth's Active Directory & Enterprise Messaging System Project, known as "MassMail" at http://itd.state.ma.us has been developed and contains pertinent information about the "MassMail" project. The site also contains a survey to be completed by Commonwealth agencies to assist the MassMail Project Team in collecting preliminary information regarding each agency and its participation in the project.

ITD is creating this new centrally administered Commonwealth wide enterprise messaging system to replace Banyan systems which will no longer be supported. This centralized solution will be designed so that other agencies may be able to participate in the future. As mentioned above, the new system will utilize Microsoft Windows 2000 and Microsoft Exchange 2000 to produce a true enterprise messaging system and to take advantage of the better features, performance and reliability while controlling administration and support costs.

Therefore, the vision of the MassMail Project includes the following key objectives:

- Enhance e-mail for the Commonwealth users by giving them a more reliable, standard, and efficient messaging system.

- Reduce administration, support and operational costs of supporting many e-mail systems.

- Create a Commonwealth wide Windows 2000 AD infrastructure for user authentication that agencies can leverage for future use, such as file, print and application services.

- Provide value added services both now and in the future such as team collaboration, knowledge management platform and other workgroup applications.

- Increase productivity of Commonwealth employees by providing them with an efficient messaging system

Agencies will play a primary role in defining and confirming the Commonwealth's messaging and directory related business requirements associated with the above initiative.

Preliminary agency preparation steps should include the following:

- Complete the Initial Agency Survey on the "MassMail" Web Page. This is a short information sheet to help ITD learn more about agency messaging requirements and current environment.

- Work with a MassMail Project Team member to complete the detailed agency discovery templates. This is a detailed collection of agency existing network, messaging and network operating system that will be used in the design of the new system.

- Determine scope of the agency migration such as:

  – Migration requirements of E-Mail and File/Print.

  – Will the agency need assistance from a vendor?

     If required, select a vendor for migration assistance.

  – Working with an agency vendor and the ITD MassMail Project Team, schedule a time for the migration.

For more information about the MassMail Project, see the web site at http://itd.state.ma.us or contact John Loycano at 617-973-0908 or at John.Loycano@state.ma.us.

COMMBRIDGE

Now that HR/CMS is in production, the batch, real-time, and deferred CommBridge paradigms are being used for data exchange with MMARS, PCRS, MAGIC and the Treasury Payment and Retirement systems. In addition, HR/CMS is using CommBridge to send data to state and community colleges.

ITD now offers a new CommBridge service that transmits and loads reports to ViewDirect on the mainframe from applications on other platforms. Users can utilize Document Direct to view their reports from their desktops, saving a bundle on print and distribution costs.

Several new projects are underway including:

- **EMALL** - CommBridge will be used to connect the new Internet based procurement system, EMALL, to MMARS and to the Information Warehouse.

- **Public Safety** - several projects are currently being defined with Public Safety agencies to share data using CommBridge.

More information about CommBridge is available on ITD's Intranet site at http://www.itd.state.ma.us/commbridge/cbhome

DIVISION OF LOCAL SERVICES CONTINUES ITS WEB PIONEERING

The Department of Revenue's Division of Local Services (DLS) has used information technology as one of its principal strategies to increase customer service to cities and towns while simultaneously increasing efficiency and productivity within the Division. Over the last ten years, early use of Internet technologies, CD-ROM publication, automated property revaluation analysis, and aggressive encouragement of e-mailed state and local data have transformed how Local Services' staff do their jobs while simplifying local officials' access to data and services. To achieve similar gains in the next few years will be a challenge, given the complexities of user needs and resources, security and control issues, and the underlying technologies themselves. Local Services has, nevertheless, staked out an ambitious agenda to:

- Build interactive DLS applications and databases on the Internet;
- Integrate local and state data resources through creative technical partnerships; and
- Find ways to get the latest technologies in the hands of local officials through so-called 'thin client' applications, limiting the need for system administration expertise in smaller town halls.

Improved public access to the Municipal Data Bank's information strikingly reveals how technology can continuously improve the same basic service. The Municipal Data Bank contains many years of detailed financial, demographic, and management information on cities and towns in Massachusetts. Not so many years ago, various staff responded to phone or written data requests, programmed custom reports, and mailed out resulting printouts. For the customer, the process might take days or even weeks. The custom programming approach was supplanted by a succession of methods that leapfrogged each other in effectiveness:

- The on-line bulletin board;
- Then Data Bank extracts in Lotus & Excel files posted on the Internet;
- At-A-Glance community summaries posted and regularly updated on the Internet; and
- Most recently, the Community Report Builder, allowing anyone to design and generate a custom Data Bank report on the Internet. Internet hits for this latest innovation, now over 20,000, are effectively doubling each month.

Most public data needs are now met with instantly available, constantly updated Internet files, and staff time is devoted more to improving services and supporting Web users than simply to maintaining existing products.

Local Services recognized the Internet's potential relatively early and quickly built a web page to better distribute time sensitive Cherry Sheet (Local Aid) information, Data Bank files, *City & Town*, bulletins, regulatory notices, various publications, and downloadable programs for calculating tax rates or reporting on municipal finances. In those early years, 2,000 hits per month were gratifying proof of the Internet's value. A few years later, the DLS web site (www.state.ma.us/dls) was responding to over 120,000 hits per month.

Ten years ago, the Division distributed programs written in Lotus macros to 351 cities and towns to aid in the complex tasks of calculating a tax rate within the strictures of Proposition 2 and of reporting detailed revenues and expenditures on the 52-page "Schedule A". These programs went through various iterations until this year when the full power of Excel and Visual Basic were brought to bear. Support and troubleshooting requests virtually disappeared while expressions of community satisfaction were many and varied. Communities reported that tasks that hitherto had taken days of effort were reduced to a few hours.

Future DLS initiatives, currently in planning or active development, include:

1. Move the Municipal Data Bank and all other DLS databases to web-enabled Oracle-based applications to allow local officials to process submissions, check community status, or seek assistance at any time.

2. Conduct a feasibility study to electronically link local assessors, deed registries, MassGIS, DLS, and other state agencies using land parcel-based records into a shared distributed database that can increase efficiencies at all levels and result in shared GIS resources over the Internet.

3. Reduce the locally burdensome 52-page Schedule A to roughly a quarter of its current bulk, benefiting local accountants, DLS, and the US Census Bureau.

4. Promote and possibly prototype Internet-hosted financial applications for smaller communities who find it extremely difficult to hire or contract for IT system administration skills while local client/server systems become ever more complex.

5. Investigate ways in which "Distance Learning" strategies might contribute to the Division's staff intensive, travel extensive training programs.

6. Provide a searchable database on the Internet of all DLS municipal legal opinions, documents, and publications comparable to one recently developed for internal use within the department.

DATA CENTER REINVENTS ITSELF

In its commitment to excellence, the Information Technology Division's Data Center Service Bureau (DCSB) has reorganized into 'Centers of Excellence' teams. Their vision is to organize the ITD Operational Services Department around the delivery of computer services with the objective of providing better, faster, cheaper and smarter services to their 100+ customer agencies. The overall goal is to focus on providing better levels of services to customers through continuous improvements.

From the customer's perspective, the most noticeable change is the creation of a team of Business Relationship Managers (BRM), each of whom provides a designated representative for each customer. The BRMs will learn to understand each user department's business so they can represent customers' current and future requirements. The BRMs will also be data center analysts, evaluating processes and researching products. These changes are designed to make the Data Center more customer-centric, focusing on customer satisfaction, increased services and reduced cost. The BRMs will analyze customer requirements and propose alternatives to help determine the best solution. ITD will establish a cooperative interaction between the Data Center's BRMs, the Strategic Planning Group's Agency Liaisons, and the Communication Services Bureau's Information Services Team to streamline relationships between ITD and its customer agencies.

DCSB's customer orientation is also reflected in new services being offered. For example, they now offer Oracle on both mid-range systems and on the mainframe. The Division of Capital Asset Management will run their new Comprehensive Asset Management Information System (see the earlier CAMIS story) on the mainframe using an Oracle database and full GUI capability, taking advantage of the mainframe platform's better performance and backup and recovery features. (Please see related story on Page 4.) The Registry of Motor Vehicles is exploring the possibility of storing accident records on the mainframe. The next release of OS/390 will have web-enabled functionality built in. The next release of TCP/IP will offer additional functionality in machine access. DCSB also offers a form design service that develops printable templates so customers do not have to buy expensive pre-printed forms. They have two new large Xerox printers that print the "form" at the same time as the data.

Another way of saving customers money is by publishing reports electronically. In this manner, the customer can view the reports using View Direct and decide which portions, if any, require printing. Reports requiring archiving can be saved on disk or tape, saving paper and space. If customers with their own mid-range systems have large scale printing requirements, they can produce their reports electronically and then have them printed at DCSB. If these large print jobs will ultimately be mailed, e.g., periodic customer statements, the DCSB can handle both printing and mailing using their new mail distribution hardware (envelope stuffer, mail sorter and bar coder). With this advanced mail processing, a standard envelope can be sent first class for twenty-six cents. Their current mail processing saves over $1 million a year.

In collaboration with ITD's Technology Finance Group (TFG), DCSB is trying to make their customers' data processing budgeting more predictable. DCSB produces usage reports in processing cycles and computer resources. TFG converts this data into Chargeback dollars organized by type of service and includes forecasts based on plans. TFG publishes Chargeback Quarterly Usage Charts on ITD's Intranet site at http://www.itd.state.ma.us/tfg/chargeback/menus/ChargebackQuarterlyUsageCharts.htm

DCSB is a 7 by 24 environment that is moving closer to being able to offer 7 by 23 hours of up time for mission critical systems with only one hour per day for the maintenance and housekeeping that requires that systems be down. Several alternative solutions are possible to permit the greatest amount of up time: doing backup to silos while the mainframe is online; doing backup offline while using a snapshot of the systems online; having onlines running in read-only mode while doing backup; etc. DCSB is also researching the possibility of another data center so that there would be alternate processing sites to guarantee uptime for mission critical systems requiring continuous availability.

DCSB is also moving closer to monitoring systems more automatically and proactively by defining thresholds predictive of problems and taking action before the problems are really threatening. At this point, analytical processing software can eliminate the need to have huge logs being checked manually, and then reacting to problems after they occur.

DCSB's new customer centric orientation will enable it to offer its customers a truly competitive service bureau capable of providing equal or better service at an equal or better price. Now that the Year 2000 is here and DCSB has upgraded its hardware and software and modernized its organization, it can now offer a range of technical solutions: from traditional mainframe processing to mid-range and client/server processing in an open systems environment, using a graphical user interface and web enablement.

HR/CMS OPEN FOR BUSINESS AND ONGOING MAINTENANCE

Over 2500 Commonwealth employees worked diligently to ensure the smooth and successful implementation of HR/CMS. These included members of the Executive Committee, Project Team, HR/CMS liaisons, human resource and payroll personnel and staff from the Office of the Comptroller, Information Technology Division, and Human Resources Division. That hard work paid off.

On a typical day, HR/CMS users begin logging in at 7:30 in the morning. By noon users number 300 and by mid-afternoon 400 or more Commonwealth payroll and human resources personnel are at work on the new system.

On January 31, 2000, the conversion of PMIS records began. Twenty-three hours and 30 minutes later 55,312 records were converted into HR/CMS. On February 7, 2000, HR/CMS was open to users. Commonwealth employees, formerly paid from PMIS, received their first bi-weekly pay on February 18, 2000.

A month later the conversion of CAPS began. The 30,126 CAPS records were converted in 9 hours and 40 minutes and on April 14, 2000, 77,768 Commonwealth employees received their bi-weekly pay from HR/CMS.

ITD is responsible for maintaining HR/CMS, the Commonwealth's new client-server human resource and payroll system for over 1500 users. "We're off to a good start," says Anne Gioiosa, Application Manager. "Given the size and complexity of the project, we've already accomplished a lot. There are additional changes we'll be making to fulfill the vision we had for HR/CMS. To accomplish that we have a process in place that works."

If a department requests for example, a new time reporting code or a change to their union dues, a System Information Request (SIR) is initiated. Through this process a production change request is made and a fix is initiated. After testing, the change is migrated to the production system. Priorities for all SIRs are set by a team that includes representatives from the Treasury, Office of the Comptroller, Human Resources Division, Higher Education, the Judiciary, and system interfaces.

The challenge is to assure that the SIR will not adversely effect any of the systems with which HR/CMS interfaces; for example, other Commonwealth systems such as MMARS, PCRS, and MAGIC. The team that sets priorities for SIRs must also understand the business and system requirements of all these systems and vendors and must maintain excellent communications with them. No maintenance change occurs in isolation.

Once the decision is made to implement a change, the team can accomplish the task far more effectively than they could in the old Commonwealth mainframe systems, PMIS and CAPS. Changes to those systems had to be hard-coded. In HR/CMS, what used to require up to three months of programming can now be accomplished by making changes to configuration tables.

The work referenced in this article could not have been accomplished without the entire Project Team and, in particular, the Conversion, Application, and the Technical Teams. Thanks to all for a job well done!

LIEUTENANT GOVERNOR SWIFT CHAMPIONS PRIVACY LEGISLATION

privacy policies to see what changes can be made and to ensure they keep personal information securely stored. The Order further seeks to ensure that the dissemination of this information occurs only when absolutely necessary.

This year, Lt. Governor Swift was chosen to be a member of the Federal Trade Commission's Advisory Committee on Online Access and Security and is the only elected official to sit on the panel. The purpose of the Advisory Committee is to provide advice and recommendations to the Federal Trade Commission regarding implementation of certain fair information practices by domestic commercial Web sites. In particular, the Advisory Committee will address providing online consumers reasonable access to personal information collected from and about them and maintaining adequate security for that information.

According to its charter, the Committee will consider: whether the extent of access provided by Web sites should vary with the sensitivity of the personal information collected and/or the purpose for which such information is collected; whether the difficulty and costs of retrieving consumers' data should be considered; whether consumers should be provided access to enhancements to personal information; appropriate and feasible methods for verifying the identity of individuals seeking access; whether a reasonable fee may be assessed for access; and whether limits could be placed on the frequency of requests for access. The committee, which also includes representatives from several Massachusetts Internet and security companies, is due to conclude its work by May 31st.

Lieutenant Governor Swift has praised the recent implementation of a new federal rule promulgated by the Federal Trade Commission to protect children's privacy on the Internet by blocking online services from collecting personal information without parental consent. The new rule empowers parents to decide whether to distribute their children's personal information and hands them the right to review information collected about their children from online services. "Protecting privacy, especially the privacy of children, is extremely important to Governor Cellucci and me," Swift said. "While we are doing all that we can to protect the privacy of Massachusetts' children and citizens at the state level, we are very pleased that the federal government, privacy advocates, and the business community have worked so well together to protect the privacy of all children across the nation."

Lieutenant Governor Swift's career in government began in 1991 when she was the youngest woman ever elected to the Massachusetts State Senate. She quickly made her mark, becoming the youngest woman in Senate history to serve in either party's leadership when she rose to the rank of Assistant Minority Leader. In 1997, Swift became Director of the Massachusetts Office of Consumer Affairs and Business Regulation.

Lieutenant Governor Swift is a native of North Adams and graduated from the North Adams Public Schools and Trinity College. She lives with her husband and daughter in Western Massachusetts.

For more information about the Cellucci-Swift Administration's Consumer Privacy Initiative, please visit http://www.state.ma.us/consumer/New/pr062399.htm

INFORMATION TECHNOLOGY DIVISION

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If any part of the address on this newsletter is incorrect, mark the changes on a photocopy and
send or fax the copy using the information in the upper left.

A MESSAGE FROM THE SECRETARY

The Massachusetts economy is considered one of the top five state economies in a country that has the top economy in the world. Strong economies do more to enhance the health and welfare of our citizens than any government program. When jobs are plentiful and wages are strong, fewer people are on public assistance, crime is lower, and consumer confidence is high. Today's challenge is to take advantage of our economic strength to hedge against inevitable economic change. The challenge for information technologists in Massachusetts is to help foster and continue this economic success story by increasing productivity, complementing our core technology industries, and making it easy and efficient to do business with Massachusetts government.

This year the Cellucci / Swift administration has asked this division to focus on that latter goal - to facilitate doing business with and within Massachusetts government. Through technology we can break down the agency barriers that have existed for years. For example, we can enable a company doing business in Massachusetts to file its withholding and unemployment taxes in one process. To accomplish this, DOR and DET need to develop the series of business rules that would allow that single tax filing transaction to occur - and then turn the technologists loose to make it happen. (Ed. Note: see the DOR Connects With Business story.)

There are many such examples, and I am working with all agencies in Massachusetts state government to create a culture of technological change, innovation and entrepreneurship, and to develop inter-agency technology partnerships that will increase the friendliness of Massachusetts to businesses. I will assist those agencies having difficulty in this endeavor and I will reiterate this message at Cabinet meetings to encourage integration activities across agencies.

The Commonwealth CIO, David Lewis, has three priority areas for expediting online government in FY2001: Government to Business (G to B); Government to Consumer (G to C); and interagency functionality (G to G). The current economy – together with an educated and technology proficient workforce, and our high tech leadership – affords us an extraordinary opportunity to lead the nation in the development and deployment of on-line government.

Stephen P. Crosby,

Secretary for Administration and Finance

CONNECTING THE COMMONWEALTH

COMMONWEALTH OF MASSACHUSETTS

INFORMATION TECHNOLOGY

ANNUAL REPORT

Fiscal Year 2000

A Special Edition Of The Information Technology Bulletin

Volume 6, Number 3, Summer 2000

Commonwealth Of Massachusetts
Information Technology Bulletin

Volume 6, Number 3, Summer 2000

A Special Edition

In This Issue

MESSAGE FROM SECRETARY CROSBY

Right from the day I was sworn in, I announced that Governor Paul Cellucci and Lt. Governor Jane Swift had asked me to launch an Electronic Government effort to Internet enable the interactions of state government with businesses, citizens, and other government jurisdictions. I was delighted to find that there was already an Information Technology Division with the infrastructure and the expertise to do this. Both David Lewis and Val Asbedian have demonstrated inspired work and leadership in getting Massachusetts moving in this direction.

This is a high-priority opportunity to become more Internet enabled than any other state government. This major Commonwealth initiative will be starting in early September with the formation of an Electronic Government Task Force. Governor Cellucci will co-chair the Task Force along with a senior executive from the private sector. There will be a steering committee with representatives of principal agencies such as the Department of Revenue, the Registry of Motor Vehicles, the Office of Consumer Affairs, and the Executive Office of Environmental Affairs. We're inviting participation from the Legislature and the Constitutional Offices who will hopefully be part of this effort from its beginning – they have already expressed interest. These public sector participants will be joined on the Task Force by several high tech industry leaders in Massachusetts.

First we'll take a deep, hard look at what Massachusetts state government is doing. The immediate purpose will be to develop a strategic plan for electronic government in the Commonwealth: a high-level road map of where the Commonwealth of Massachusetts wants to go with electronic government. The Task Force's early emphasis will be with small businesses whose relationship with government can be imposing. We want to simplify that. As for consumers, almost all interactions with government could be done electronically. We'll choose projects where we can have a big impact while getting something done quickly. We're willing to invest some money to make some changes.

Lieutenant Governor Swift is a recognized national leader in dealing with privacy issues in the electronic world. As she participates in the Task Force, her knowledge of privacy issues will inform our work in this area.

My background in both the public and private sectors has prepared me in a unique way for this challenge. The first decade of my career was spent working as a legislative assistant to Lt. Governor Don Dwight, as campaign manager for Governor Frank Sargent and Mayor Kevin White, and as an administrative assistant to Congresswoman Margaret Heckler. Then I spent the past 25 years in business, most recently as the CEO of a high tech company that has been a leader in a variety of Internet applications. We built our own infrastructure over the Internet and also had an advanced web site that was chosen as a "Best of Boston" site by Boston magazine. My experience in both public and private sectors enables me not only to appreciate the effort that a challenge like this requires, but also to recognize just what we can accomplish.

Stephen P. Crosby

Secretary for Administration and Finance

[Editor's Note: See the Spring 2000 issue of the IT Bulletin, v. 6 n. 2, for more information about Lieutenant Governor Swift and privacy. And watch for updates on Electronic Government in future issues.]

IT INVESTMENT PLANNING

IT Investment Planning and Oversight efforts have been an essential procurement tool since the CIO office for the Commonwealth of Massachusetts was formed in 1996. This oversight was enhanced by legislation in 1998 mandating that the CIO approve any IT investment exceeding $200K.

During FY 2000, these activities were primarily focused on Y2K and projects essential to the century change. With the Y2K task successfully completed, oversight actions were directed towards a detailed comparison and review of all spending received by the Fiscal Affairs Division (FAD). During this review process, ITD's Strategic Planning Group (SPG) learned that the approach being used (following the various fiscal processes) was incomplete. As a result, SPG developed an Investment Brief process to capture total project costs, including all years and all funding sources. This process was employed for the first time last spring, with great success. One positive result of the Investment Brief process was that the first quarter capital allotment for IT Bond II was received by ITD for distribution to Agency projects on July 21, 2000 – about three months earlier than last year. This is a significant improvement over prior years, and early receipt of these funds will allow projects to begin on time.

As SPG continues to work on oversight of IT projects, the focus has shifted to the concept of investment planning. This shift occurred primarily because the best opportunity to maximize IT benefits occurs in the early stages of project proposals. Reviewing projects that are well underway does have the benefit of allowing for mid-course correction or perhaps identification of projects whose benefits are no longer apparent. However, ensuring proper project outcomes in advance of initiation of spending will provide maximum benefit to the Commonwealth.

Because SPG has found that most projects are well managed, they are concentrating their efforts on project definition and planning. Some of the beneficial concepts of these activities are:

1. Tying initiatives (broad based programs) to IT strategies.

2. Segmenting initiatives into manageable projects

– with durations in the 12 to 18 month timeframe.

3. Identifying detailed project milestones.

4. Coordinating funding to achievement of these milestones.

5. Identifying project outcomes or benefits resulting from specific milestones.

6. Reviewing technologies used within projects to identify opportunities for agency collaboration.

During the recently completed planning event, projects were identified with a total value of almost $700 million. Using this information, SPG has funded certain projects utilizing IT bond funds. SPG also determined that the IT Bond funding is not nearly sufficient for the IT investments required by the many important programs the Commonwealth needs to support in the coming years.

As a result, ITD is pursuing the establishment of an "IT Bond III", as well as specific funding to pay for various enterprise programs such as MassMail (see the Enterprise Communication Services story). SPG will also be working with agencies and FAD to identify the appropriate levels of IT funds needed to both operate existing infrastructure as well as to support growth and new programs.

MEMA RECEIVES EMMY NOMINATION

The Massachusetts Emergency Management Agency (MEMA) television spot "When the Clock Strikes Midnight" received an Emmy nomination in the Single Public Service Announcement category. The advertisement was aired throughout Massachusetts to promote Y2K safety awareness and to direct the public towards the Y2K Wise Web Site. The Rendon Group Production Company created the ad. The National Academy of Television Arts and Sciences (NATAS) 23rd Annual Boston New England Emmy Awards took place on May 7, 2000, at the Seaport Hotel where over 700 attended.

ONLINE GOVERNMENT IN FY2000

Online Government in Massachusetts

While the Year 2000 "bug" captured the majority of time and resources during FY2000, agencies continued their efforts to streamline government services through the use of innovative online applications. Following are some notable examples:

- The Department of Revenue reported that approximately 800,000 returns (25% of the total 3.2m returns filed) for the 1999 Tax Year were filed electronically. Electronic Filing options include Practitioner E-File, Telefile, PC File, and Online Filing.

- The Registry of Motor Vehicles' Express Lane applications -- that now include registration renewals, duplicate registrations, citation payments, duplicate license and ID, change of address and special plate purchases -- have served more than 100,000 people and have resulted in the collection of more than $4m in fees since 1996.

- The Department of Environmental Management's CAMP Massachusetts application allows citizens to make camp reservations by phone and online for 28 Massachusetts forests and camps. More than 40,000 reservations were made using this application last year (4.4% of the total 900,000 potential camp users.)

During the second half of the fiscal year, the state's CIO refocused IT planning and resource priorities in three major application areas as part of a new IT Investment Planning process;

1. Applications designed to improve interactions between government and business

2. Applications designed to improve interactions between government and citizens

3. Applications designed to improve the efficiency and effectiveness of government operations

As we begin FY2001, there is a renewed effort at the highest levels of the administration to move Electronic Government in Massachusetts to a new level. Massachusetts has long been recognized as a leader in the early implementation of online government applications. We must now collectively face the next challenge to work across agency and government branch boundaries to fully realize the promise of Electronic Government and create seamless applications centered on the end users of government services.

Governor Cellucci and Lieutenant Governor Swift have charged the Secretary of Administration and Finance, Stephen Crosby, to provide coordination and leadership for the new Electronic Government initiative. See the Message From Secretary Crosby for more details on this major effort.

Online
Government in
Massachusetts
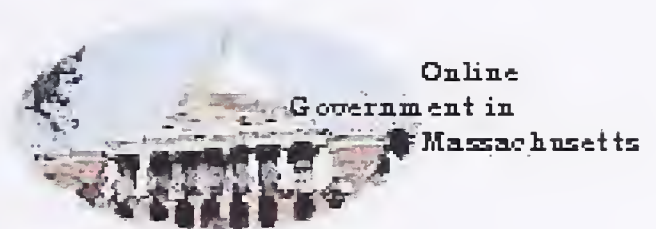
Updates on the E-Government project will be posted on ITD's web site as well as in future editions of the IT Bulletin. Questions or comments can be directed to Claudia.Boldman@state.ma.us.

THE.COMMONWEALTH

The name, The.commonwealth, was created by a coalition of leading technology associations to promote Massachusetts as a center for technology innovation and leadership. The.commonwealth Coalition was formed in 1999 by the four major statewide associations that represent the information technology industry in Massachusetts: the Massachusetts Software and Internet Council, Massachusetts Interactive Media Council, Massachusetts Telecommunications Council, and the American Electronics Association New England chapter. The coalition also includes affiliate organizations, corporate sponsors, media partners and spokespeople, and more than 100 executives from Massachusetts companies. Since its inception, the coalition has focused its efforts on unifying the technology community, commissioning research to identify it strengths, and positioning Massachusetts as The.commonwealth, the "State of Things to Come".

The.commonwealth Coalition was formed to promote Massachusetts as the best place in the world in which to:

· Start and grow information technology companies.

· Conduct IT research and development.

· Invest in IT products and companies.

· Access world-class technical and business talent.

The.commonwealth website at http://the.commonwealthmass.com will be a portal to the world's most highly-concentrated cluster of IT innovators, a group of more than 5,400 world-class companies in software, the Internet, telecommunications and electronics. The website will become the link to the most up-to-date information on technology business activities and resources available in Massachusetts.

The recent joining of forces of The.commonwealth and the Cape Cod Technology Council is the first of six regional pairings planned for the next 18 months. Now that it has firmly established itself in Greater Boston, The.commonwealth is broadening its horizons and trying to bring the entire state under its expanding umbrella.

Joyce Plotkin, president of the Software and Internet Council and a key member of The.commonwealth board, said, "A community of Internet companies has emerged in the Berkshires. A host of fiber-optic companies are evolving in central Massachusetts. There are thriving software, dot-com and telecommunications clusters all over the state. We want to connect the dots throughout the Commonwealth. We want to spread the word within the state that we're here, and work to make the whole greater than the sum of its parts."

Eventually, The.commonwealth hopes to bring its message out of state, but for now it is focusing on bringing everyone in state together in high tech harmony.

NEW INTERNET BASED BUSINESS APPLICATION IMPROVES EFFICIENCY FOR DHCD

HOUSING PORTFOLIO

Lists all low income assisted housing in that community.

The Department of Housing and Community Development administers programs that stimulate the creation of affordable housing opportunities, encourage local economic development, build, renovate and manage public housing, revitalize blighted neighborhoods, improve the management of local governments and the delivery of local services, and respond to the needs of low-income individuals and families across the state. In order to fulfill these objectives, DHCD provides funding and technical assistance to a number of business partners throughout the state, including municipalities; housing authorities; regional, local, and neighborhood based community development entities; and for-profit and non-profit organizations in the private sector.

In its role as an oversight authority DHCD must ensure that money is spent appropriately and that program objectives are accomplished. To do this requires a tremendous amount of reporting, which in the past also meant an inordinate amount of paper. For example, DHCD processes requests for funding, budget information and accounting information, and oversees quality assurance and quality control information. When this process is done on paper it passes through many hands, which causes mistakes, delays and lost information. Typically, a budget revision done on paper could take up to 7 months. This same task can be reduced to a single month when done electronically.

These types of time savings, along with other benefits such as improved efficiency, improved access to data, and improved problem resolution are just some of the results of DHCD's new Internet based business applications system. Similarly, housing inventory turn-around-time can be reduced from three years to one or two months by converting from a paper based to Internet-based system. "This initiative could not have come at a better time," says Tom Simard, Deputy Director for Administration and Finance at DHCD. "As a government agency we are charged with the responsibility of administering our resources wisely, but we have to continually look for ways to modernize and improve our business relationships and our service delivery to our customers. These applications enable us to do both."

On one side of the housing spectrum, DHCD has created an environment where quality assurance and quality control of the programs managed by its business partners has been improved dramatically. These applications provide an objective means of ensuring those business partners are doing the job they're being paid to perform. For example, QA/QC is monitored by inspecting units for federal HUD compliance, by tracking energy usage in the local housing authorities, by tracking vacancy rates in the local housing authorities and monitoring the capital inventory of over 60,000 housing units. DHCD is now capturing "real time" unit information – from very detailed accounting statistics and full collaborative business partner message tracking, to the "inventories" of what housing units are available and

Economic Development

When the Massachusetts Legislature established the Massachusetts Technology Development Corporation (MTDC) in 1978, the Commonwealth adopted an economic development strategy to capitalize on its technology talent base. MTDC was assigned the objective of helping to finance technology start-up companies that could attract private co-investment and grow new jobs. MTDC was launched as a concept with a modest operating budget from the state and $3 million in Federal investment capital. The Commonwealth added a total of $5.2 million in investment funds from FY81 to FY88. Since then, MTDC has self-financed its operations and increased its total assets to over $35 million based on returns from successful investments.

MTDC focuses on seed and early stage technology companies seeking investment funds to accomplish its objectives: to create primary employment in Massachusetts; to attract and leverage private investment in these companies; to foster the application of technological innovations; and to nurture entrepreneurship among Massachusetts' citizens, planting the seeds for long-term economic development in the Commonwealth.

While MTDC's initial capital came from Federal grants and State appropriations, the Corporation uses gains realized from past investments as the primary source of funds for current and future investments. In assisting early stage technology companies to start and/or expand by commercializing technology developed in local corporations and research institutions, MTDC helps to replenish the supply of new technology businesses whose growth in employment helps offset the inevitable decline among mature technology companies. These early stage companies provide significant employment growth opportunities and long-term value to the Massachusetts economy. As of December 31, 1999, the 60 companies in which MTDC had invested reported that they employed in total more than 10,500 people with annual payrolls of over $569 million, Federal tax revenue of over $174 million, and State tax revenue of over $27 million. Two of MTDC's three funds also distribute a share of their gains to the Massachusetts General Fund.

In addition to its investment programs, MTDC also provides management assistance to Massachusetts early stage technology companies. The entrepreneurs launching these firms are usually experienced technologists but inexperienced business people. MTDC's management assistance focuses on strategies to increase the visibility and successful presentation of these companies to potential investors. The management assistance program is not limited to companies that MTDC has invested in, although the assistance program sometimes identifies potential MTDC investments.

In May 2000, MTDC made its landmark 100th investment in ImPress Systems, Inc., in Billerica. Founded in 1999, ImPress designs, manufactures and markets digital printing equipment and consumables. Other 2000 investments include: Cambridge-based Atlantis Components, Inc., which develops anatomically correct, computer generated products for the dental implant market; Profile Systems, Inc., of West Springfield, which develops and offers business-to-business catalog data content management tools for effective Internet presentation; Waltham-based Qiave Technologies Corporation which develops and markets security software that provides content and resource protection for a variety of platforms.

MTDC has invested in a wide range of successful companies including Andover.Net which began in 1992 as a software publisher and refocused in 1996 on online publishing, licensing and commerce. In June Andover.Net, the leading Linux/OpenSource destination on the Internet, was acquired by VA Linux. MTDC's investment of $600,000 is now worth over $20 million. Another MTDC success story is Concord Communications, headquartered in Marlboro and provider of network management systems for health care providers since 1991. MTDC's $500,000 investment resulted in a gain of $5 million. Other client companies have remained in MTDC's portfolio for longer time periods than Andover.Net or Concord Communications. For example, Powersoft, which was subsequently acquired by Sybase, Inc., remained in MTDC's portfolio for ten years and realized a $7 million gain on its $250,000 investment.

MTDC has a Board of Directors with 11 members appointed by the Governor, eight from the private sector and three public officials. MTDC continues to play a unique role among the economic development organizations of the Commonwealth by attracting additional private capital to successfully serve its shareholders, the citizens of the Commonwealth.

DEPARTMENT OF REVENUE CONTINUES TO ENHANCE BUSINESS WEB SITE

In March, the Department of Revenue (DOR) launched a new Web site designed specifically to meet the needs of the Commonwealth's business community: the Bay State Business Connection— **www.baystatebiz.com**.

With the launch of the Web site, businesses were given the ability to register online for state taxes such as sales and withholding; download free software for filing sales and withholding tax returns via personal computer; and locate a wealth of information from a variety of federal and state agencies and business associations. Already, over 1,300 businesses have used the site to register to pay taxes and another 100 businesses have begun remitting sales and withholding returns worth over $8 million, using the software.

In June, DOR added some important new features. These include several PDF "fill-in" tax forms and the "Online Employer Reporting System," a faster and more economical option for employers to report new hires. All employers are required to report newly hired individuals and independent contractors to DOR within 14 days of hire. DOR uses this information to ensure that children receive their child support on time and in full and to reduce fraud in entitlement programs. The new online filing option is intended to ease the reporting burden for employers, as well as increase the speed and efficiency of data processing. Previously, employers had to fax these reports or submit them on magnetic media.

But enhancements to the Bay State Business Connection won't stop there.

"This Web is a dynamic place, and DOR's Web site for businesses cannot afford to stand still. We're going to expand and upgrade this Web site regularly." commented Revenue Commissioner Frederick A. Laskey.

What is the Department's next major enhancement? Web-based applications for filing sales, meals, and room occupancy taxes and for making estimated corporate payments, by January 2001. DOR is also pursuing a joint venture with the Division of Employment and Training (DET) called "Single File."

When fully implemented in September 2001, Single File will simplify the reporting requirements for employers by consolidating several filings and payments into one transaction, and more closely aligning filing and payment frequencies for different filing requirements. Filings to be consolidated include wage data and withholding (filed with DOR), and unemployment insurance contributions, unemployment health insurance contributions, and workforce training (filed with DET). If all employers use the new filing method, returns filed could be reduced by as much as two-thirds.

The development of this site and the future plans of providing a single point of entry through which employers can file all their business filing requirements are major steps towards our e-government goals.

THE COMMONWEALTH OF MASSACHUSETTS MULTI-STATE EMALL™

The Commonwealth of Massachusetts Multi-State EMall™ initiated a new era in e-government recently with its first production purchase order, making it the first live government e-marketplace in the nation that facilitates direct transactions between buyers and vendors. Through this singular Internet-based purchasing community, potentially one of the largest government to business electronic marketplaces in the nation, Massachusetts will realize the benefits of moving their purchasing to the Web.

The order for $1,525.07 worth of desktop software was placed from the Massachusetts Operational Services Division (OSD) and routed through the Central Business Office. The EMall automatically routed the requisition for approval and, upon authorization, generated a purchase order which was sent electronically to ASAP software. In addition to improved purchasing management, the system reduced a cumbersome paper-based process to just a few mouse clicks.

Within two weeks of the inaugural order, four departments in the Commonwealth had created multiple purchase orders exceeding $20,000 worth of goods from Gateway, xpedx and ASAP software. OSD, the Office of the State Comptroller (OSC), the Division of Employment & Training, and the Massachusetts Commission for the Blind were able to take advantage of the Multi-State EMall.

"Where other states are only beginning to look at E-Commerce and are talking about pilots, Massachusetts has successfully completed a pilot and moved the system into production," said Jim Kneeland, Director of the EMall. "It has been both reliable and easy to use." Kneeland went on to say, "Integration to our back office accounting system is our next big hurdle and as soon as it's completed we will offer entry into our e-business community at no charge to other entities such as cities, towns and other states. This is the only system I know of that provides the potential to support disparate accounting systems in each state using middleware while still offering the benefits associated with membership in the EMall community. It is also the only community that I know of that allows the states to share their contracts. This means that the buying power

associated with a multi-state mall is absolutely remarkable, and when you combine this with the audience that a supplier can reach and the ease of entry for suppliers, this becomes a 'win-win' situation for the public and private sectors. This is a great example of how cooperative E-Commerce solutions can provide tremendous benefits to both the public and private sectors."

The state awarded the Multi-State EMall contract to Intelisys last March following an 18-month pilot, which successfully demonstrated the power of electronic commerce to reduce costs for government procurement groups and their suppliers. The Emall is sponsored by OSD, OSC, and the Information Technology Division.

"Massachusetts is setting the standard for streamlining procurement via the Web," said Joe Quigg, Vice President for e-Government for Intelisys. "Intelisys is proud to power Massachusetts' Multi-State EMall and other states' e-commerce efforts with a unique combination of leading technology, easy links with vendors, and real-world successes that government buyers need."

The Massachusetts Multi-State EMall is the nation's first live, open, standards-based e-marketplace in the government sector that directly connects buyers with suppliers. The online marketplace allows the state to cut the administrative costs of purchasing by as much as 72 percent and obtain better pricing through aggregate volume. The Multi-State EMall is currently rolling out to 154 Commonwealth departments and will be available to all 351 cities and towns in Massachusetts. Other states will also be encouraged to join and given free access.

Multi-State EMall users can search across multiple suppliers, place orders with the click of a mouse and drastically reduce the time between purchasing, delivery and vendor payment. Massachusetts has been able to automate the entire procurement process in compliance with government best practices and rules for government procurement. It also provides the online audit capability to facilitate order tracking, order request routing, and electronic approvals and, by this fall, will be fully integrated with MMARS.

ED REFORM HEADS TOWARD VIRTUAL EDUCATION SPACE

The Massachusetts Education Reform Act of 1993 created the greatest changes to our public education system since Horace Mann established the institution of free, universal, compulsory K through 12 public education here in Massachusetts over a hundred years ago.

Among the historic changes set in motion by the Act are:

- $6 billion of new state aid over a seven-year period to create an equal foundation of support in every community no matter what the property tax base.

- Beginning with the class of 2003, every student must pass the most challenging set of graduation exams in the nation.

- Only the best and the brightest should be licensed to teach.

- The state will evaluate each school and district and appoint a receiver to administer systems that chronically under-perform.

Coinciding with the passage of the 1993 Act, the state Supreme Judicial Court ruled in McDuffy V. Robertson that the state, not municipalities, has the primary accountability to ensure that all 980,000 K-12 students receive an equal educational opportunity. The SJC left open the question of whether the 1993 Act satisfied the state's responsibility.

The growing role of the state in information technology systems is even more compelling. Since 1993, the total dollars spent on IT by public schools has mushroomed from $30 million to over $200 million a year. The pervasive nature of the Internet enables us to create huge system efficiencies by building statewide systems to replace the 350 district systems.

Section 29 of the 1993 Act directs the state to work with districts to develop a comprehensive plan for implementing technology in our K-12 schools. The initial five-year plan established three goals for IT integration into schools:

1. Improved learning opportunities for students;

2. Enhanced professional capabilities for teachers; and

3. Increased administrative efficiency and effectiveness.

The Department of Education's Ed Tech Group has focused its system development efforts in the reverse order of the stated priorities and has embarked on an aggressive plan to fulfill these goals.

In 1996, the Department began a five-year, $17 million effort **(DOE IMS)** to:

1. Upgrade the information technology and systems infrastructure of the agency.

2. Build 3-tier, web-based enterprise systems to replace 250,000 pieces of paper transacted with districts each year to collect data, collapsing the data collection cycle from 4-14 months to 24 hours.

3. Disaggregate the collection and centralized maintenance of 980,000 student records and 80,000 educator records.

4. Establish a single data warehouse with a user-friendly web data mart. The primary objectives of this project will be accomplished for $19 million by the end of the next fiscal year.

In 1998, the Department launched **MassEd.Net** for teachers. Statewide, toll-free, dial up access to the Internet with e-mail, web space, and 7X24 tech support was made available to every educator in the state for a $25 annual payment. While the market forces and state/federal regulatory environment continue to make this program financially unstable, the number of teachers on line has sky-rocketed with more than 25,000 accessing the Internet through MassEd alone.

This year, the Department is working with a coalition of districts to launch **Virtual Education Space 1.0.** VES is an on line set of tools and implementation strategies individualized for each educator, student, and parent to increase student achievement on curriculum standardized through MCAS and other measures. VES 1 will launch this fall with an individualized WorkSpace/Portal and common set of curriculum and instructional management tools. In the fall of 2001, **VES 2.0** will be launched with an individualized WorkSpace/Portal for each student and parent with access to a virtual classroom of assignments and activities for each physical class.

With the infrastructure in place, it is the Department's hope that VES will do for teaching and learning what the word processor did for writing.

CHILD CARE INFORMATION MANAGEMENT SYSTEM AUTOMATES SUBSIDIES
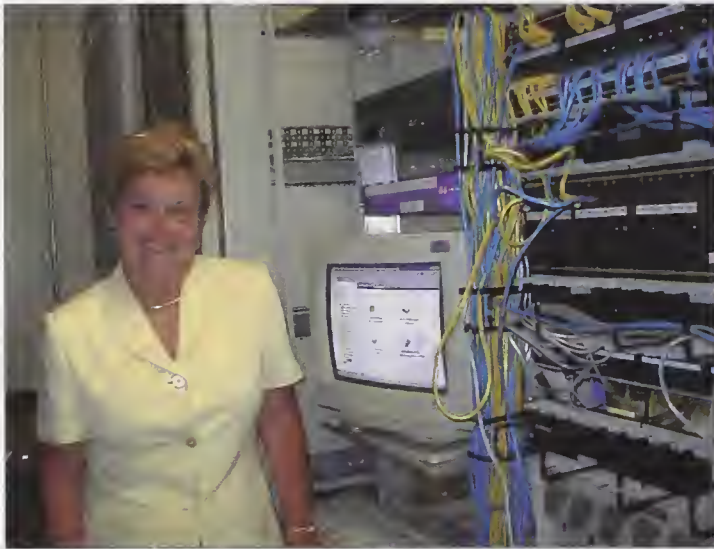
Joan Clark

Not long ago, the Commonwealth planned, delivered and paid for subsidized child care services with an archaic, paper-based management system, accompanied by an even more obsolete DOS-based system. But not anymore.

In FY98, under legislative mandate, the Office of Child Care Services partnered with Systems Engineering, Inc. to develop the solution: the Child Care Information Management System, or C.C.I.M.S. Under the leadership of Joan Clark, Assistant Commissioner for Information Technology, C.C.I.M.S. is transforming the Commonwealth's $400 million child care business from a behind-the-times system to a state-of-the-art model for other states to emulate.

C.C.I.M.S. establishes a single easy-to-use automated subsidy management system, as well as allows for the first ever statewide database of child-level, detailed data to aid in analyzing need, costs, demographic and income trends for future planning.

For years, the Commonwealth contracted with a network of fifteen Child Care Resource and Referral Agencies (R&R's), and hundreds of child care providers to be the front line managing child care subsidies. But outdated systems meant families suffered difficulties in finding care and significant delays in placements, while child care providers and R&R's were drowning in paperwork and enduring slow reimbursement from the state.

"We felt the need as well as hearing about it from providers, parents, staff at other agencies, and child care experts," said Clark, C.C.I.M.S. Project Leader, "OCCS has now met the technological challenge of making the best services available to families."

For Department of Transitional Assistance client

referrals to child care, and for vouchers for income-eligible families, the new system stores provider, rate, family, child and related information in a SQL 7.0 back-end database. The front-end is developed in MS Visual Studio, with Crystal Reports as the reporting software. Using SQL 7.0 replication services, OCCS intends to maintain a global database at central office updated nightly.

Clark also explained that contracted providers will not need a "local store" of their data. They will replace their tedious paper system with an Internet front end to directly communicate with the global database, and submit child level and billing information directly.

"We want to empower our users to manage their own reporting needs, so we are including an Access-based reporting tool and developing our own Access training curriculum to ensure that users can get the data they need back out of C.C.I.M.S.," Clark stated. "We are 100% committed to having all our contracted providers meet ITD technology standards and minimizing the user support needed."

To do this OCCS guaranteed that all users purchased hardware compliant with the state's standards. Due to many of the users being information technology beginners, OCCS sent Getronics representatives to make "house calls" at each site, assist with hardware and software installs, and provide training.

OCCS is also developing a provider/search module that will allow the R&R's to collect detailed information on participating providers and provide child care services to all families through an automated search and mapping program. Currently, OCCS is in the process of an aggressive rollout to the R&R's, with deployment of the Web-based component to follow.

MASSACHUSETTS COMMUNITY NETWORK

Now Serving 63 Communities
125 Connections

The Commonwealth of Massachusetts has been at the forefront of the information revolution ever since Alexander Graham Bell invented the telephone, in Boston, in 1876. The Commonwealth has also been at the forefront of the Internet revolution ever since Cambridge-based BBN won the contract to build the original ARPA-Net in 1968. Over the years, Massachusetts has been home to an incredible number and variety of businesses that created many of the computer and communications tools that are fundamentally changing our economy and our society.

With the leadership and support of Governor Paul Cellucci, Lt. Governor Jane Swift, and both branches of the state legislature, the Massachusetts Community Network (MCN) is a pioneering example of how government can speed the deployment of broadband infrastructure without relying on the traditional mechanisms of government regulation or subsidies. Instead, MCN has capitalized on the Commonwealth's role as a major purchaser of data communications services to spur private investment in the state's telecommunications infrastructure.

Before MCN's arrival, every city and town, school district, and public library in Massachusetts went to market for Internet access services on their own or in small groups. With the exception of Boston, and perhaps two or three other cities, this resulted in these public organizations being treated by the market as small retail

purchasers. As a consequence, the monthly cost of a T-1 speed (1.54 megabits per second) Internet connection ranged from a low of $900 in Boston to as much as $2,500 in the more rural parts of the state. The central premise of the MCN initiative was that if the state went to market on behalf of all these organizations, which collectively have roughly 5,000 separate buildings, MCN would be by far the largest purchaser of data communications and Internet services in the state.

Testing this theory, the legislature and the Cellucci Administration provided $9 million to the Massachusetts Corporation for Educational Telecommunications (MCET) – a quasi-public authority chartered to use technology to improve education, the business climate, and the lives of the citizens of Massachusetts – to cover MCN's startup and other one-time costs. The early visions of MCN were of a state owned and operated network, but the rapid pace of technological advances and the emergence of robust competition in the market for Internet access convinced MCET that MCN should rely, to the maximum extent possible, on the infrastructure and expertise of a private partner.

The MCN RFP purposely contained only two mandatory requirements. First, MCET's partner had to provide service to any public-sector facility in the state, regardless of location. Second, MCN had to have a flat-rate pricing structure, so that a given amount of bandwidth would cost the same for any public organization in the state, regardless of location. These two requirements reflected MCET's determination that as a public instrumentality dedicated to serving all of the people of Massachusetts, it was unacceptable to deploy a solution that excluded the more remote parts of the Commonwealth from the benefits of MCN.

The MCN service features state-of-the-art technology, commercial grade reliability, 24x7 network monitoring, end-user help desk support, and rich sets of bundled services. Furthermore, MCN's price points are nothing short of revolutionary: high-speed 1.54 mbps, fully managed data communications and Internet service for $400 per month, including a new Cisco router. The same services are available at the same price anywhere in Massachusetts with no installation charges. It is projected that MCN can save the public sector, and hence the taxpayers, approximately $125 million over the first five years.
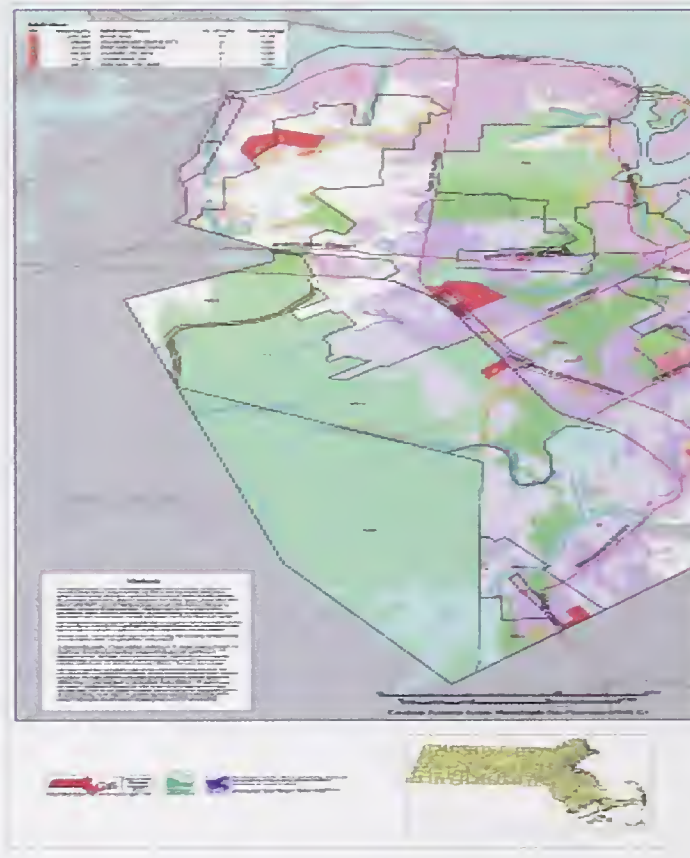
USING GIS FOR COMMUNITY PLANNING

Sprawling patterns of development are threatening our natural resources and changing the historic identity and physical character of Massachusetts communities. Recognizing this, the Executive Office of Environmental Affairs (EOEA), through its Community Preservation Initiative, is providing information, tools and support for local decision-makers and involved citizens who are working to develop a different vision of the future for their communities. Geographic information system (GIS) technology is a key part of this program.

As a first step, EOEA is contracting build-out analyses for every city and town in Massachusetts. These studies aggregate GIS

Map shows zoning, protected open space, developed areas, recent subdivisions and miscellaneous absolute constraints.

partial constraints, e.g. wetland areas can often be counted towards lot area minimums.

In a little over a year, 180 municipal analyses have been completed, 20 regional "summits" have been held by the Secretary of Environmental Affairs and about 70 towns have had their build-outs individually presented to local officials. Because of the automation and economies of scale, build-out studies that typically cost $20,000 to $40,000 were delivered at a cost of around $7,000 each.

Southeastern Massachusetts, where 51 contiguous communities have been done, provides a classic picture of sprawl. 60,000 acres have been developed since 1985, with land consumption increasing at almost triple the rate of population growth. Large-lot residential development will cover almost 60% of the region at build-out. We can

information to describe for each town the ultimate result of current land-use regulations. Without saying how quickly it will happen, they provide maps and statistics on potential future growth (residential and commercial/industrial) and needs (schools, water, roads) to help communities understand the kinds of changes they may face and to confront the question: is this what they want?

MassGIS, the statewide GIS office within EOEA, worked with regional planning agencies to refine a methodology that takes full advantage of the power of GIS. This methodology is on-line at www.state.ma.us/mgis/buildout.htm. Photo-interpreted land-use mapping by UMass shows what areas have been developed already. An inventory of protected open space is also needed. Using information about these and other constraints, combined with a digital map and detailed analysis of zoning, the GIS "spatial calculator" can estimate the yield of housing units and commercial/industrial space in undeveloped areas. Some factors are modeled as

project significant shortages in water supply with future demand almost doubling from currently permitted levels in many communities. Most significantly, the regional analysis revealed that most communities can support less than 20% of the demand for housing associated with the jobs and commercial development for which they are currently zoned.

These and other conclusions from the build-out studies should provide a powerful incentive for local officials to work together to solve regional problems such as water supply. GIS will be part of these efforts as well, thanks to the Governor's Executive Order 418, which provides planning "vouchers" that communities can use to address the issues of housing, commercial development, traffic, open space and natural resources. Through the build-outs, and in the Executive Order 418 follow-up program, GIS staff will be working hard to integrate information from different sources and providing analysis to help decision makers and citizens envision the future they want for their communities.
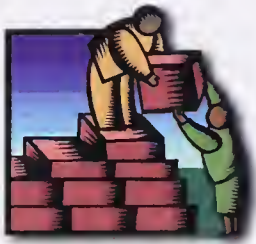
a new **HR** and **payroll** system

HR/CMS

The implementation of HR/CMS means that for the first time the Commonwealth of Massachusetts will have one integrated HR and payroll system for its 85,000 employees. The system allows up to 10 direct deposit deductions, comprehensive reporting, MBTA extended passes, accrual tracking on the pay advice and centralized garnishments.

Since the Commonwealth's two legacy systems (CAPS and PMIS) were over ten years old, costly to maintain and difficult to modify to support new functionality, the HR/CMS Executive Committee selected the PeopleSoft HR and payroll system to replace them.

HR/CMS was the largest implementation in which the Commonwealth has ever been engaged. Its success is due to the hard work of the 193 department liaisons who, since the fall of 1999, attended over 10 one-day meetings, various workshops and assisted their HR and payroll personnel to get ready.

HR and payroll personnel also needed to collect additional data for direct deposit, enter garnishments, ensure connectivity to the new system and attend training.

In 21 computer labs across the state, 1,734 Commonwealth employees were trained. Over 900 HR and payroll personnel within the Executive Branch attended training. In addition, the Judicial Branch sent over 300, Higher Education sent over 250 and the Constitutional and Independent offices had over 200 in attendance at HR/CMS training.

To ensure that everyone received the training that they needed, 104 three-day HR classes, 100 two-day payroll classes and 99 two-day time and attendance classes were offered from November 1999 to April 2000. In addition, classes were offered in regulatory requirements and labor relations.

During the conversion of data from the Commonwealth's legacy systems, 55,312 employees and contractors were converted in 23 hours and 30 minutes. 30,126 employees and contractors who were paid from CAPS were converted in 9 hours and 40 minutes.

When HR/CMS was implemented 24 trainers provided over 250 days of support to HR/CMS users at their desktop
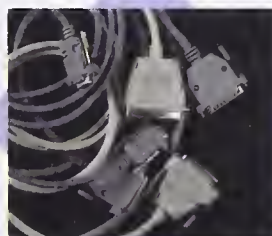
Today, users are becoming proficient at entering data and using the functionality available on HR/CMS. Most users are on the system between 10 a.m. and 3 p.m.

CAMIS SYSTEM TO TRACK STATE ASSETS

The Spring Issue of the Information Technology Bulletin (Volume 6, Number 2) reported on an innovative tracking system being implemented by the Division of Capital Asset Management (DCAM). As reported in that article, DCAM is responsible for major capital projects and general oversight of over 5,000 buildings and 77 million square feet of space across the state. Keeping track of all that space is a daunting task but thanks to CAMIS, it is now getting easier.

In 1999 the Massachusetts legislature authorized a major new initiative to manage the state's real estate, appropriating funds to conduct a comprehensive condition survey of the state's capital assets and to procure a software package to manage the collected data. As a result, DCAM has begun implementation on the Comprehensive Capital Asset Management Information System (CAMIS) program, including the CAMIS survey and the CAMIS software.

The engineering firm Parsons Brinckerhoff is conducting surveys of all state owned buildings. All major building equipment and systems, including areas such as mechanical and electrical rooms, labs, food service areas, HVAC systems, roofs and windows, will be assessed and catalogued. The survey will note deficiencies, capital needs, and ordinary maintenance schedules for each asset.

The key to keeping track of all this data is the new CAMIS software, which is housed at the Commonwealth's computer operations center. Installation occurred over the summer. As surveys are completed and users are trained, the CAMIS software will provide a new and invaluable maintenance management tool to agency facility and budget staff. Facility managers will be able to utilize the preventive maintenance features of the software to maximize the useful life of capital equipment. The CAMIS data will help optimize operations at each facility by allowing managers to develop better planning and spending requests. For example, the new software will help facility managers track and schedule upcoming maintenance and plan for capital equipment purchases. The software will also allow DCAM and the Department of Environmental Management (DEM) to make more accurate capital planning and spending recommendations for all of their facilities and land across the Commonwealth. As the state's biggest land owner, DEM will be a major user of CAMIS for managing their assets.

While the CAMIS survey and the initial database will include major capital equipment, the software also includes functionality that will allow interested agencies and facility managers to enter additional, "lower level" equipment and maintenance tasks to the system. In addition, the Commonwealth's contract with the software vendor includes other modules, such as Inventory Control, that user agencies may purchase separately to optimize their local utilization of CAMIS. Agencies that wish to purchase additional modules will need to fund the necessary licensing and training components. Purchases of such additional modules will need to be coordinated with DCAM.

The entire implementation remains on schedule for completion in Spring 2001.

Holyoke Heritage State Park

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ITD RESOURCES

ITD
Bringing Technology to Light

COMMBRIDGE, an infrastructure application built on IBM's MQ Series that enables the exchange of data and messages among business applications without regard to platforms, languages, and technology, was significantly enhanced. Now applications can send or request data in real time while the receiving application is allowed to defer its response to a more operationally convenient time. This gives many business applications the flexibility they need to accommodate data exchanges. Now that CommBridge is being used by many Administration & Finance and Health & Human Services applications, projects to expand the use of CommBridge to Public Safety agencies have begun.

The Commonwealth's primary **WEB SITE**, www.state.ma.us, now has a **SEARCH CAPABILITY** that allows a visitor to the site to find information that not only physically resides on these primary web servers, but is found on any Commonwealth web site.

Backend integration to **MMARS** for the new EMall procurement system was started in FY00 whereby MMARS will take orders entered through EMall and automatically create the necessary encumbrances and validate that funds are available.

Since much of the work done by ITD requires strong project management, a new automated project management system was selected and implemented throughout the organization. All time worked, including payroll attendance exceptions, is captured by the tool and is associated with projects, chargeback categories, and standard activities. The software, **PLANVIEW** from PlanView, Inc., of Austin, Texas, is client/ server based with a web-based Time Charging module. ITD will be implementing the fully web-based version of PlanView in FY01.

THINK YOU KNOW THE COMMONWEALTH'S INFORMATION WAREHOUSE? TAKE ANOTHER LOOK

Since it's inception in 1994, the Commonwealth's Information Warehouse has been the place to go to gather business intelligence on the state's accounting system (MMARS) data and Payroll Cost Reporting System (PCRS) data, and later, personnel data from PARIS. Using standard query tools like Microsoft Access and Excel, more than 2700 users probe the corners of the financial database to provide answers to immediate questions as well as unearth Department financial trends and conditions waiting to be recognized.

But wait, there's more! This past winter, with the introduction of the statewide Human Resource/ Compensation Management System, the Warehouse began to receive this data and to support all Departments in their reporting and analysis of this data. Warehouse Server and Database

Management System upgrades have allowed for the expansion of the Warehouse to include over 180 new HR/CMS data tables. New tables include detailed human resource data on each employee, data on all Commonwealth positions, time and labor hours as reported by departments and, of course, payroll data for all employees. The payroll related data is added at each biweekly pay period, and the HR data is updated daily, meaning yesterday's personnel action is in the Warehouse today!

With the mounting volume of tables and views, and a growing number of information workers needing quick and easy access to this important data, the Warehouse team is looking to new strategies and methods of delivering information to customers. Six "starter queries" for HR/CMS data, developed by Warehouse staff, are available for download from the CIW Intranet site (http://www.iw.state.ma.us) and may be run from the user's desktop. Warehouse users can modify them as they wish to obtain the tailored information desired. Other upcoming enhancements include the Warehouse team's investigation of On Line Analytical Processing (OLAP). Some data may be best analyzed in multi-dimensional structure with a variety of potential variables and measurements compiled into "cubes" and then accessed via a web browser. This OLAP technology will provide a powerful means for a wider group of state employees to gain access to HR and payroll data.

Thought you knew the Information Warehouse? It's worth another look!

COMMONHELP RESTRUCTURED

As of Monday, July 3rd, the technical Help Desk at 1-800-335-4702, known as CommonHelp, is located at One Ashburton Place in Boston.

To better serve the customers of ITD, CommonHelp has been restructured to consist of two teams: a Technical team and an Application team. This will allow CommonHelp to route calls to the most knowledgeable person available for each type of problem and provide improved communications to their customers.

The goal of CommonHelp is to resolve problems on the first call, while providing courteous and reliable service. If an issue cannot be resolved immediately, the Help Desk personnel will log and track the issue to resolution.

In an effort to provide the best customer service possible, CommonHelp will develop focus groups over the next fiscal year. This will allow CommonHelp to create a more personal relationship with their customers and provide a forum for suggestions on how to improve the service.

CommonHelp looks forward to taking on additional support roles as new projects are implemented.
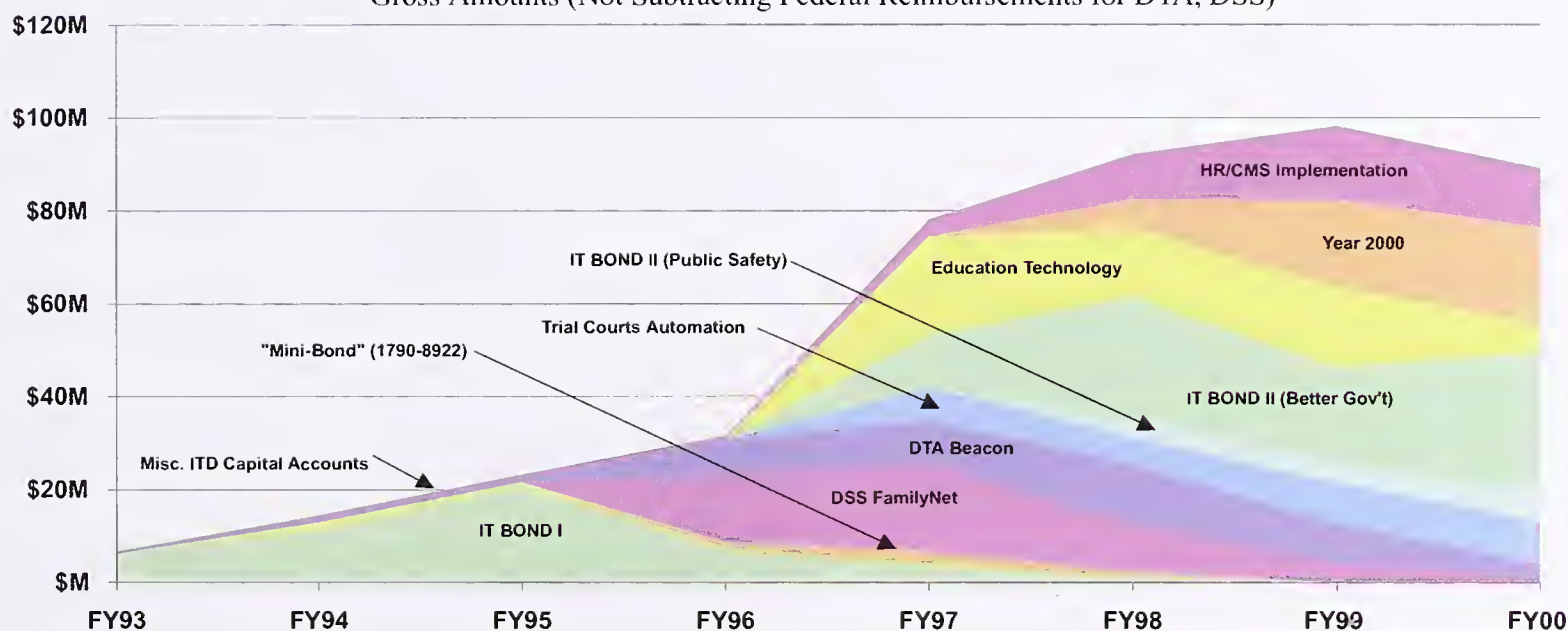
HISTORICAL IT SPENDING & SUCCESSES

Information Technology Bond/Supplemental Project Spending
Fiscal Years 1993-2000 (Est.)
Gross Amounts (Not Subtracting Federal Reimbursements for DTA, DSS)

Law Enforcement Technology Training Centers

The Executive Office of Public Safety (EOPS), in conjunction with the Criminal Justice Training Council, is implementing a network of computer training centers across the Commonwealth to provide state of the art technology training to public safety professionals. Through these centers, officers will be trained in the use of computer technology and office automation software. The Reading Academy Lab is fully operational; the Boylston Academy Lab was ninety percent completed as of June 30, 2000 and is scheduled to be operational in August 2000. With great quantities of information readily available to police officers, a computer is becoming an important day-to-day tool much like a vehicle or a gun. Training in the use of automated systems, as well in how to use the information available, is critical for each police department in the Commonwealth.

Real Time Offender Identification at the Time of Arrest is here.

With the installation of the new Automated Fingerprint Identification Systems (AFIS) at the Crime Laboratory in Sudbury, State Police have begun the delivery of near-real-time identification services to law enforcement throughout the Commonwealth. The old AFIS system only provided for batch fingerprint matching. The new system will allow the criminal justice community to submit electronic offender fingerprint images for immediate matching. The store and forward server located at the Criminal History Systems Board is also connected to the FBI's IAFIS system in West Virginia, enabling a submitting agency to get a state and national positive identification in less than two hours. EOPS, using federal grant funds, recently announced equipment awards that will provide thirty-eight police departments the equipment needed to use these new automated services. With either live scan fingerprint capture equipment, or fingerprint card scanners, departments will submit images for processing. Federal and State identification information and RAP sheets will be returned to the submitting equipment within hours. EOPS is working to identify funding to provide additional equipment to other communities in the very near future.

BEACON

BEACON automates client eligibility determinations and improves efficiency of workflow within the Department of Transitional Assistance (DTA), between the Department and other State and Federal agencies, and with vendors. BEACON Release 1.0 was piloted in April 1998, and successfully implemented statewide in March 1999. BEACON 2.0, which eliminates continued maintenance of parallel systems, was released to the statewide pilot environment in July 2000. Staff training and validation activities will be conducted statewide in the pilot environment throughout the summer. BEACON 2.0 is expected to go into statewide production in the fall of 2000, at which time it will replace BEACON 1.0 and the PACES, PRISM and ARTS systems.

The Massachusetts Information Turnpike Initiative (MITI)

The Massachusetts Information Turnpike Initiative (MITI) creates a high capacity, advanced network for data, interactive digital video, voice and dedicated Internet access. Designed for use by the UMass system, state and community colleges, schools, libraries, medical centers and state and local government agencies, MITI provides better communication throughout the Commonwealth and enables the use of new communication and information technology in a reliable statewide network. The MITI network enhances UMass telecommunications capacity, provides inter-campus linkages to support distance learning, assists in the development and wide-spread deployment of modern public information services, and collaborative R&D efforts among university, industry, and government laboratory researchers across the state.

IT BOND II FY2000 PRELIMINARY EXPENDITURES

Project Name	FY2000 As of 8/10/2000 Expenditures
MAGNET	$6,335,094
HR/CMS	$4,927,474
RGT - Compus Infrastructure Upgrodes	$3,068,797
Electronic Commerce	$1,785,605
DOR - Client/Server Network	$1,570,119
DOC - Inmote Record Imoging & Archiving	$1,483,335
Stote Police Informotion Network (SPIN)	$1,417,048
Reengineering Of The CHSB Systems	$1,175,445
SCA - Integroted License & Document Monogement System	$1,104,271
Integroted Legol & CJIS System (Sex Offender Registry)	$1,000,000
DOR - Imoging Platform Upgrade	$939,042
UMASS - Distonce Leorning Across Compuses	$859,832
ITD - Strotegic Plonning	$853,530
SEC - System Integrotion & Office Automotion	$668,453
UMASS - Mossachusetts Informotion Turnpike Initiotive (MITI)	$617,711
On-Line Environment License & Park Reservation System (SPORT)	$601,355
EHS - Systems Integrotion Project	$555,774
Mojor IS Development Projects	$534,737
UMASS - Public Library For The 21st Century	$534,117
DMH - Office Automotion	$500,004
DA Dotobose Development	$366,526
CIT - Low Enforcement Technicol Troining Centers	$328,123
Fireorms Licensing And Imoging (FLIP)	$320,740
OCD - Client Fiscal Management System	$269,623
DOR - Interoctive Voice/Dota Systems	$233,700
DEM - Focility Monogement Information System	$192,643
Home Core Monogement Information Systems (HOMIS)	$150,001
Senote Automotion Projects	$135,075
SAO - Automotion Of Audit Preporotian	$125,000
Springfield Technicol Cammunity College	$41,683
DOR - Imoging And Workflow Technologies	$19,881
SEA - Office Automation	$6,206
IGO - Office Automation	$1,320
Grand Total	**$32,722,264**
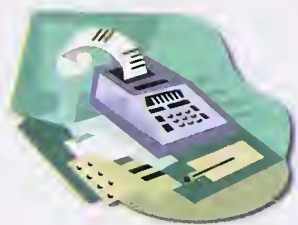
PRELIMINARY FY2000 IT SPENDING

Executive or Constitutional Office or Branch	Gross Operating Expenditures	Gross Capital Expenditures	Trust Expenditures	Federal Expenditures	Grand Total
Health & Human Services	$79,776,664	$9,700,599	$6,886,444	$7,285,270	$103,648,976
Higher Educatan	$15,283,301	$2,164,699	$67,487,601	$64,917	$85,000,518
Administratian & Finance	$30,468,816	$21,699,988	$5,805,367	$12,673,230	$70,647,401
Public Safety	$28,842,967	$9,441,808	$3,953,481	$2,491,393	$44,729,649
Judiciary	$10,956,666	$11,287,810	$129	$0	$22,244,606
Labar	$1,735,739	$40,255	$1,947,132	$17,927,472	$21,650,599
Treasurer & Receiver General	$16,426,679	$211,855	$490,426	$0	$17,128,960
Department Of Education	$6,943,177	$7,200,868	$420,311	$1,827,928	$16,392,283
Secretary Of State	$9,028,572	$3,434,274	$0	$48,044	$12,510,889
Environmental Affairs	$4,799,238	$5,970,388	$205,009	$613,102	$11,587,737
Transpartatian & Canstructian	$1,684,934	$4,195,737	$29,888	$0	$5,910,559
District Attarneys	$3,080,328	$2,462,822	$101,486	$76,102	$5,720,738
Cansumer Affairs	$2,122,860	$1,198,495	$643,571	$26,910	$3,991,836
Joint Legislative Expenditure	$2,759,113	$1,090,096	$0	$0	$3,849,209
Sheriff's Departments	$2,798,069	$99,939	$0	$232,007	$3,130,015
Attarney General	$1,367,416	$3,610	$123,633	$13,543	$1,508,203
Office Of The State Camptraller	$166,311	$643,490	$0	$0	$809,801
All Other	$2,476,731	$566,714	$748,751	$651,521	$4,443,717
Grand Total	**$220,717,578**	**$81,413,449**	**$88,843,227**	**$43,931,440**	**$434,905,695**

Notes:

Accounting Fiscol Yeor 2000 Expenditures os of June 30, 2000 including the following object codes:

E07, E08: Phone expenditures and chargeback
E09: Software and licenses
E10: Data processing chargeback
H03: Cantracted IT professionals (including Medicaid processing system)
E11, J08, K01: IT cabling equipment and supplies
K08: Telecommunications equipment
K12: TV Braadcasting equipment

L01, L21: IT equipment lease-purchase ar rental-lease
L12, L32: TV Braadcasting equipment lease-purchase ar rental-lease
L41: IT equipment maintenance and repair
L48: Telecommunication equipment maintenance and repair
L52: TV Braadcasting equipment maintenance and repair

Does Not Include:
Salries far State technical staff

All of the Commonwealth's 1,000 statewide commodity contractors are eligible to participate. Suppliers can participate in Multi-State EMall using a standard Web browser from anywhere with proper authorization. Intelisys' patented Supplier-Managed Catalogs™ allow businesses to act as buyers and suppliers in the marketplaces and to control the look and feel of their products online by directly linking their existing online catalog to the community, a benefit unavailable in aggregated catalog models. Suppliers who do not have an existing online catalog can create one overnight using the catalog wizard available in Intelisys ConnectTrade™ Catalog.

The EMall makes participating very easy for buyers, requiring only a Web browser and standard modem connection. Buyers can search the Supplier-Managed Catalogs by keyword or by individual catalog and can choose from the most current information about product pricing and availability. Once a requisition is generated, the order is automatically routed through the system to obtain the proper approvals, before the order is placed. The entire process is paperless, takes less time, and lets the user better track purchasing activity than a paper-based system.

There are two other important points to note about MCN. First, no public organization is required to use MCN. While it would have been easier if the legislature had directed end users to subscribe to MCN, MCET prefers an environment where they have to earn customers' business each and every day. Second, MCET has made a commitment to the Cellucci Administration and the legislature that MCN will never require additional state funding. Instead, end user monthly charges will cover all of the operating costs of the network. While state funds were essential in getting MCN started, the $400 monthly price is the unsubsidized, fully loaded cost of ongoing operations. The combination of these two factors means that MCN must operate like a private business, something that is in the best interests of MCN's customers and the taxpayers of Massachusetts.

Beyond direct cost savings, MCN realizes the promise of improving the efficiency, quality, and convenience of government services. Not only will more government organizations get online, but these facilities will also connect via the same homogeneous network to facilitate data sharing and electronic interoperations. MCN and MAGNet will be interconnected to appear as one network in the near future. Imagine a world in which school districts connect to each other and the Department of Education across the same network; where local police stations connect with each other and the State Police across the same network; where public health facilities connect to each other and the Department of Public Health across the same network, and so on. The possibilities for more responsive, more cost effective government are staggering.

Finally, by leveraging the public sector's status as a major purchaser of data communications services, MCN has allowed Massachusetts to attract private investment in the state's telecommunications infrastructure. In order to meet the public sector's needs, MCN's private partners are deploying broadband infrastructure into areas of the state that have historically been neglected by private providers. Thus, MCN represents a huge win for the public and private sectors in Massachusetts.

their conditions. The data gathered greatly improves DHCD's ability to manage what gets done, where, when and how much it costs.

On the other side of the spectrum, DHCD has established a highly efficient method of collecting voucher applications (those who want/need housing) and managing the intricacies of walking someone through the initial phase to successful housing placement. The old paper process took applications for eleven different programs, administered by nine regional administering agencies via a non-standard, decentralized service delivery. This has been converted to a single, secure and efficient online data program that is equitable to all.

In the middle of this spectrum are the time consuming business processes that are inherent to government such as forms, signatures, budget approvals, prioritizing projects, planning, creating new solutions, policies and regulations. DHCD has developed a number of Internet based applications that address the "hidden to the public" business technicalities that must be addressed. These applications have greatly reduced the amount of time spent waiting for checks to be cut, waiting for budgets to be approved/revised, accessing accurate housing statistics and other back office business processes.

DHCD views what they have developed as a series of steps that when all pulled together create a well-defined stroll down the path to efficient government services. These business applications are designed with the primary goal of speeding up processes that previously took far too much time to get done. Using a web-based approach to replace low quality, outdated, redundant business methods with a more efficient model that its business partners throughout the state can access securely has been received well by those same partners who share the Agency's public purpose and also seek increased efficiency in accomplishing their common objectives.

MESSAGE FROM THE CIO

As you read this FY2000 Information Technology Annual Report for the Commonwealth of Massachusetts, a lot of the contents should seem familiar or at least similar to what you've seen in prior IT annual reports. There are many write-ups on agency automation projects, just as the IT Bulletin has been presenting for six years now.

But while you recognize what's familiar, it's also important that you recognize what's different this time – most of the stories are organized into categories meaningful in terms of electronic government and its priorities: government to business, government to citizens, government to government and improving government efficiency. And this time there are stories about economic development, two of which feature Massachusetts corporations that were begun with state government funds but which are now self-supporting. And don't miss the fact that the second half of the Bay State Business Connection story is about "Single File", a project that the Department of Revenue is pursuing as a joint venture with the Division of Employment and Training.

Electronic government is the future. This should give us all the opportunity to do some things we've long wanted to do but couldn't because of the way that the Year 2000 effort took over our lives. But as we move forward, we need to think of "us" as the Commonwealth enterprise. When we think about licensing, we need to think about all kinds of licensing rather than just those that one agency issues. When we think about letting the customer serve themselves for, say, an address change, we have to do it in a way that captures this data for the Commonwealth, not just for the Division of Registration or the Registry of Motor Vehicles or the Department of Revenue. Taking the enterprise view will be one of the greatest challenges of electronic government requiring more cooperation, compromise and business re-engineering than we have ever done in the past. It offers a wonderful opportunity.

CONNECTING THE COMMONWEALTH

ELECTRONIC GOVERNMENT   BUSINESS AND CITIZENS

David Lewis
CIO

INFORMATION TECHNOLOGY DIVISION

One Ashburton Place, Room 801
Boston, MA 02108

The Information Technology Bulletin is a quarterly newsletter of ITD's Strategic Planning Group. One of the SPG's tasks is to act as a clearinghouse for IT information. This publication furthers that goal. Please send correspondence to Managing Editor, Elaine Socha, the Information Technology Bulletin, Room 801, One Ashburton Place, Boston, MA 02108

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This publication is also available on the web at http://www.state.ma.us/itd/bulletin/

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ITD PUBLICATIONS

The Information Technology Division of the Executive Office for Administration & Finance issues many publications such as: this newsletter; job openings at ITD; information technology standards, guidelines and policies; project reports; technical bulletins and manuals; and so forth.

The place to find these publications on the public Internet is:

http://www.state.ma.us/itd/.

The place to find these publications on the Commonwealth Intranet is:

http://www.itd.state.ma.us/publications.htm.

InformationTechnology

THE COMMONWEALTH LAUNCHES E-GOVERNMENT INITIATIVE

A Public/Private Partnership to Bring State Government to the Next Level of Online Services

Governor Paul Cellucci (right) and Lycos CEO Bob Davis (left)

On September 13, 2000, Governor Paul Cellucci, Lieutenant Governor Jane Swift and Lycos CEO Bob Davis hosted the first meeting of the Electronic Government Task Force, a 75-member group of public and private sector representatives. This group will employ public and private best practices to evolve the state's web site and E-Government capabilities into a fully integrated, task-based Commonwealth enterprise portal.

"The goal is to create a full-service government that people can bring into their home or their business on their own schedule," Governor Cellucci said. "The Commonwealth's enterprise portal will maximize the functions that can be transacted and the information that can be accessed on-line, making the lion's share of essential state services available twenty-four hours a day, seven days a week. This will be 'the people's portal'."

"The Commonwealth's new task-based enterprise portal will streamline state government and provide more efficient service to residents and businesses," said Lieutenant Governor Swift. "But we expect that this initiative will do more than provide efficiency. It will empower the citizens of the Commonwealth by giving them greater control of how their state government serves them." Lieutenant Governor Swift, who this year served as the only elected official on an FTC panel of national consumer privacy experts, stressed that in their efforts to provide the best possible service for the citizens of Massachusetts, the Administration would make the privacy concerns of its portal users a priority during the process.

"I am honored to be working side-by-side with forward-thinkers from the public and private sectors to empower the citizens of Massachusetts," said Mr. Davis. "This is a ground-breaking event with an amazing assembly of great minds. Massachusetts has consistently been at the forefront of technological revolution, and I am eager to offer Lycos' experience and expertise to develop innovative, Internet-based solutions for everyday needs."

Video presentations of the Task Force meeting opening remarks and a presentation on the eGov Vision for Massachusetts presented by Russ Meekins from Andersen Consulting may be viewed at http://tv.lycos.com/mcet.

Lieutenant Governor Jane Swift

The Massachusetts EGov Opportunity

The Commonwealth already is recognized as a leader in the early adoption of eGov (electronic government) applications. These applications have been developed to provide services more quickly and effectively to the citizens and businesses of Massachusetts. Agencies such as the Department of Revenue and the Registry of Motor Vehicles have received awards and been recognized as leading sites in the country for their transaction-based applications.

In spite of these successes, much remains to be done to achieve a more comprehensive, accessible state government. Massachusetts state government must work across agency, functional and branch boundaries to create truly integrated, seamless services that are easy, quick and efficient to use by a broad array of customers

INFORMATION TECHNOLOGY BULLETIN VOL. 6 NO. 4, FALL 2000

THE COMMONWEALTH LAUNCHES E-GOVERNMENT INITIATIVE

A Public/Private Partnership to Bring State Government to the Next Level of Online Services

with radically different levels of sophistication. The goal of the eGov effort is to transform the way in which the Commonwealth interacts with its customers: businesses, citizens, other government entities, and employees.

EGov Project Organization

The E-Government Task Force has been assembled to provide oversight for development of the vision, strategic intent and conceptual direction of the Commonwealth's eGov future. The Task Force is co-chaired by Governor Paul Cellucci and Robert Davis, President and CEO, Lycos, Inc. Its broad membership includes high-level policy makers in state government spanning the three branches of government as well as Constitutional Officers, business leaders from the technology and small business sectors, representatives from consumer organizations, local government representatives, representatives from academia, and senior members of the eGov Project Team.

Task Force members Labor & Workforce Development Director Angelo Buonopane and Public Safety Secretary Jane Perlov.

Much of the work of the Task Force will be conducted in smaller Workgroups. Five policy workgroups have been organized to provide recommendations in the areas of:

- Funding Mechanisms/Revenue Generation
- Organizational Supports/Governance
- Policy and Legal Framework
- Marketing and Branding
- Accessibility and the Digital Divide

The Task Force will also provide input into the prioritization of application opportunities and comment on the eGov Strategic Plan and Roadmap.

The eGov Steering Committee, led by Stephen P. Crosby, Secretary for Administration and Finance, is a subset of the Task Force that will meet on a more frequent basis and will provide the eGov Project Team with guidance and direction. The eGov Project Team is composed of members of the Strategic Planning Group of the Information Technology Division and Andersen Consulting. Andersen Consulting was selected to provide eGov Strategy consultation services to the

A&F Secretary Stephen Crosby

project pursuant to a Request for Quotes solicitation under the Commonwealth's IT services statewide contract.

EGov Project Phases:

1. Performance of an "eDiagnosis" to assess the current eGov achievements, the services the Commonwealth already has on-line, the IT applications those services use, and the additional services that are planned. Additionally, the eDiagnosis undertakes a determination of the "IT readiness" of state agencies. It is important to produce this cross-agency overview as many of the most powerful benefits of eGov come from horizontal and vertical integration of service delivery, and from coordination among agencies.

2. Development of an "eStrategy" by identifying opportunities, gathering agency metrics, and prioritizing and assessing opportunities. The first step involves interviewing high-level policy makers and business/consumer representatives, who are asked to define their key customers and the key services provided to them or alternatively, what services they expect from government and how they would like to see them delivered. The interviews will generate a large list of opportunities for on-line services.

Commonwealth CIO David Lewis (right) and Strategic Planning Director Val Asbedian (left) discuss eGov Plans with Russell Meekins of Anderson Consulting.

The eGov Project Team, together with the Steering Committee and the Task Force, will narrow this list using various selection criteria to create a smaller number of programs that will be given priority for short and long-term implementation. The selected programs will constitute the original foundation of what will evolve into the Massachusetts portal.

3. Development of an "eGov Strategic Plan and Implementation Roadmap". The plan will address the business case for the selected applications, expected costs, schedule for implementation, barriers to implementation and the timing and extent of expected benefits. The plan will also provide a high-level portal design. The plan will be finalized in January, 2001.

For more information and updates, visit the project web site at: http://www.state.ma.us/egov/

NEW MOBD WEB SITE WILL HELP NEW AND EXISTING BUSINESSES

The mission of the Massachusetts Office of Business Development (MOBD) is to assist in the creation and preservation of jobs in Massachusetts. Through their new web site at www.state.ma.us/mobd, the Office has a new vehicle to help businesses currently located in Massachusetts, as well as those outside the state that are interested in expanding or relocating here.

By visiting the web site, businesses can find out how MOBD provides information, guidance, and coordination efforts on everything from site selection and permitting, to financing and workforce development assistance. For example, the site provides information on how the MOBD assists businesses find places to locate through the state's Site Finder Service. This service is available thanks to a partnership with the state's utility companies and real estate associations.

The Massachusetts' Site Finder Service takes the time and energy consuming legwork out of finding industrial and commercial sites. This free service matches individual business real estate needs with available sites. Listings are compiled by real estate brokers, as well as economic development groups and local businesses that are motivated to bring new business to their community.

Information is also provided on the Massachusetts Economic Development Incentive Program (EDIP), which is designed to stimulate job creation in distressed areas, attract new businesses, encourage existing businesses to expand, and increase overall economic development readiness. Through the Economic Development Incentive Program, cities and towns embark on a planning process in partnership with the state. Planning includes setting goals and priorities, collaborating with neighborhood communities and the private sector, and streamlining regulations. The Economic Assistance Coordinating Council, the public-private body established to administer the Economic Development Incentive Program, is charged with the responsibility of designating Economic Target Areas (ETAs), Economic Opportunity Areas (EOAs) and Certified Projects - the 3 steps in the Economic Development Incentive Program.

The web site offers information on a wide array of business financing options, such as bond financing programs, equipment financing programs, emerging technology funds and venture capital. Information and links are also provided regarding the state's permitting process and small business assistance. In addition, users may also download forms and applications related to economic target and opportunity areas directly from the site in pdf format.

RMV ENHANCES CUSTOMER SERVICE THROUGH THE WEB

In its continuing effort to be more responsive to customers' needs, the Registry of Motor Vehicles (RMV) recently added more interactive services to its web site.

Now at a new (and easier to remember) address, www.massrmv.com, the web site has been expanded to accept applications for duplicate licenses and changes of address. In addition, citizens can register to become an e-mail subscriber, which will allow them to receive news and updates electronically from the RMV.

These new web site enhancements join a growing list of Internet services that are designed to make it easier to do business with the Registry. Over the past three years, customers with access to the Internet have been able to electronically renew their automobile registrations, order special plates and pay traffic citations.

"The intent is to make life easier for our customers," said Registry of Motor Vehicles CIO Larry McConnell. He added that Registrar Daniel A. Grabauskas has made the Internet a centerpiece of RMV upgrades and the results are showing. For example, during its first month of operation in July 1996, the web site conducted slightly over 300 transactions. That figure now exceeds 34,000 transactions per month and the site is visited more than 130,000 times each month. In addition, Mr. McConnell estimates that the site will have collected over $10 million in revenue by the end of December, more than paying for itself.

With the success of these web site enhancements in place, Mr. McConnell said additional customer service enhancements will be soon put in place through Governor Cellucci's E-Government Initiative. These enhancements will focus on web based customer transactions such as payments for excise taxes and tickets. Currently if a customer has outstanding payments for excise tax or parking tickets due, they have to go to each town to pay them. "They would like to pay at the Registry but they can't," said Mr. McConnell. "The E-government initiative will allow them to pay on-line and avoid needless running around. This is the kind of initiative that helps our customers by cutting across agency, state and municipal boundaries."

If approved by the e-government task force, Mr. McConnell expects to start work on this future enhancement during the first quarter of 2001. Other enhancements are sure to follow. "The RMV is always looking to improve customer service and the Internet is helping us meet that objective," he said.
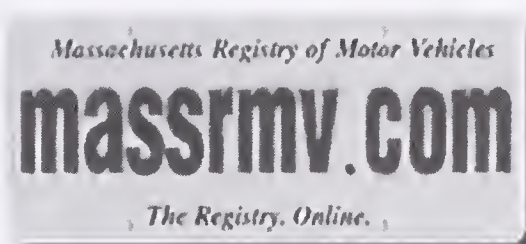
A Look at the New AFIS System
The Future is Now!

The Fall 1999 Information Technology Bulletin reported on the Commonwealth's efforts to build a new Automated Fingerprint Identification System (AFIS). This new system will store 3.1 million fingerprint image records and electronically process 1600 transactions per day.

According to State Police Captain Michael J. Saltzman, commanding officer of the State Identification Section (SIS), the successful deployment of the central AFIS system occurred during December 1999. "The new AFIS system is designed to establish a distributed processing concept. Under this concept, the Commonwealth's public safety organizations are encouraged to submit criminal arrest fingerprint cards electronically to the SIS," said Captain Saltzman. The rollout of the remote electronic fingerprinting systems is currently under way.

The state police procurement included the purchase of a central fingerprint matching system, seven ten print processing workstations at the central site, and seven live-scan devices for remote processing and eleven latent-print processing workstations. Two of the latent workstations were assigned to the Boston and Springfield police departments. The remaining latent workstations are assigned to the state police crime scene service sections throughout the Commonwealth. These devices allow for the processing of fingerprints recovered from a crime scene.

To support the concept of distributed processing, the Executive Office of Public Safety (EOPS) Programs Division made grant funds from the National Criminal History Improvement Program (NCHIP) available that allowed the State Police to procure additional electronic fingerprinting systems under the initial AFIS procurement. As a result of the additional funding, the Commonwealth procured an additional thirty-eight electronic devices that will be distributed to local police departments. State public safety officials anticipate that once the new AFIS is fully deployed, seventy-five percent of the state's criminal arrest cards will be processed electronically.

Captain Saltzman explained that the new AFIS is designed to provide electronic responses to electronic submissions. "Once this system is fully operational and at optimal performance, police departments and agencies that submit fingerprint electronically may expect an identification response from the State Identification Section within minutes. The submissions are also forwarded to the FBI for national searching and responses from across the nation are normally processed and returned within several hours", said Captain Saltzman. "Police departments will now have the ability to receive and use valuable information almost immediately. In the past, departments might wait weeks, even months for information to return from the state and FBI."

AFIS Supports Federal & State Exchange of Criminal Records

The Commonwealth will now move forward with its efforts to fully participate in the Interstate Identification Index (III) program. III is the cooperative federal/state system for the decentralized exchange of criminal history record information. It is an electronically accessible index of the arrest records maintained by the FBI. III serves as a "pointer" system, identifying the existence of records maintained by the states. In the same manner that a card catalog assists library searches, the III enables a participating state to search the criminal history records held in other participating states by submitting a single request to the III.

To participate in the III, a state must ensure that fingerprints support their criminal arrest records and that the records submitted to the FBI are done so by one channeling agency. The procurement of the new AFIS has enhanced the capabilities in this area and with the designation of the State Identification Section as the "sole-source" submitter, the Commonwealth is ready to participate.

Prior to the deployment of the new AFIS and the building of the state's Store & Forward server by the Criminal History Systems Board (CHSB), the technological solution and necessary infrastructure were not in place to effectively support the participation in III. The Store & Forward concept incorporates live scan technology and card-scanning workstations that will be distributed to the Commonwealth's police departments and criminal justice agencies to facilitate the electronic transmission of ten print arrest cards.

CRIMINAL & FIREARMS RECORD KEEPING

According to Jim Slater, Chief Technical Officer for the CHSB, the Store & Forward server located at the Criminal Justice Information System (CJIS) Data Center in Chelsea will receive and return electronic submissions over the CJIS. "We will receive criminal arrest records from the departments submitting electronically and we will direct the messages to the State and to the FBI for processing. Responses from the state and FBI will be routed back to the contributors through the Store & Forward," explained Slater.

Barry LaCroix, Acting Executive Director of the Criminal History Systems Board offered that, "the Commonwealth has made great strides, since the commitment to transition to a fingerprint-supported criminal records system. We have come a long way since this plan was born in 1992. And with the support of the Executive Office of Public Safety and the state's Information Technology Division, we are about to positively change the way we identify criminals, document criminal history and provide improved access of data to our law enforcement agencies."

New System Will Track Gun Sales and Licenses Electronically

Another finger print related project being pursued by the Commonwealth is an integrated, automated firearms licensing system called the Massachusetts Instant Recording and Check System (MIRC) being proposed by the Criminal History Systems Board (CHSB). Under MIRC a local police department would issue a bar-coded, firearms license and digitally fingerprint firearms licensees. At the point of sale, the gun dealer would swipe the license to capture information concerning the licensee, verify the license with a digital fingerprint check and enter data identifying the gun sold.

MIRC would equip local police departments with a fingerprint scanner, a digital camera, a scanner and a PC workstation. The department would use that equipment to obtain digital fingerprints, photograph and other data identifying the license applicant. The information would also be encoded on the license

itself. Gun dealers would also be equipped with a PC workstation, fingerprint scanner, and a bar code reader that would interface with the firearms license data maintained by the CHSB. The dealer would run the license through the bar code reader and the prospective purchaser would enter his fingerprints into the fingerprint scanner. The fingerprint scanner would verify that the fingerprint matches the automated fingerprint maintained by CHSB. The bar code reader would then transmit the licensee's identifying data to CHSB's database.

The system would then check for any disqualifying records that prohibit the purchase of a firearm (e.g. restraining orders, warrants, criminal convictions). If the system indicates that the purchaser may be disqualified, the sale will be postponed for a period of time to determine if the subsequent event actually disqualifies the purchaser consistent with the federal Brady Bill. When the sale is approved, the gun dealer will enter on the computer terminal the make, model and serial number of the purchased firearm.

Over 60,000 gun transactions are made annually in the state. Under MIRC, the transactions will be instantly entered into the CJIS system, saving time and costs associated with processing and entering paper licenses and gun sales. According to Barry LaCroix, Acting Executive Director of the Criminal History Systems Board, an RFP will be issued for the new system in early 2001 and implementation of the MIRC System statewide is expected to be completed by 2003.
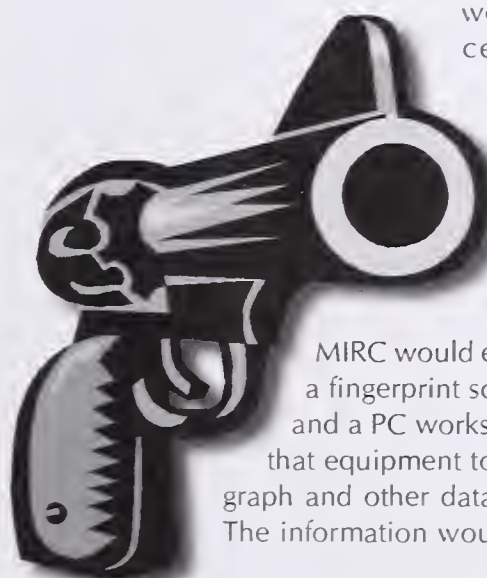
ENTERPRISE COMMUNICATION SERVICES

NEW TELECOMMUNICATIONS NETWORK SERVICES CONTRACT

On December 11, 1999, under the guidance of the Operational Services Division, the Telecommunications Procurement Management Team (PMT), comprised of representatives from eight agencies and the Information Technology Division announced the **Communications Network Services RFR.**

The scope of this procurement solicited Bidders to offer, install and maintain a wide variety of data, telecommunications and cellular services for Commonwealth Agencies, Authorities and other Eligible Entities. These Communications Network Services include, but are not limited to, those listed below. Bidders could respond to one or more services of this RFR.

Voice Services	Data Services
Local Exchange Service	Dedicated Services
Outgoing Toll Services	Volume Sensitive Services
Incoming Toll Free Services	X.25 Packet Services
Calling Card Services	Frame Relay Services
Pay Telephone Toll Services	ATM
Pay-per-Call Services	xDSL Service
Private Line Services	SONet Service
	Videoconferencing Services
Cellular/PCS	
Cellular Services	
Personal Communication Services	

Current Network Service Situation

Currently the Commonwealth spends approximately $40 million annually for communication network services. The incumbent local exchange carrier, Verizon (formerly Bell Atlantic) carries all intra-LATA toll and data traffic, while MCI WorldCom carries all long distance traffic under the current Custom Network Services Arrangement (CNSA). The CNSA contract has recently been extended and will absolutely expire on December 31, 2000.

The replacement contract (the "CNS") will award up to four contracts for each service, taking advantage of increased competition in the telecommunications market place. Announcement of the winning bidders was made on November 7th. Actual number of awards was based on best value for the Commonwealth as determined by the PMT.

Highlights of CNS contract:

- Vendors are providers, not just resellers, in order to insure clear responsibility for services.

- The contract is available for use by all 'eligible entities' statewide.

- Increased discounts apply as volumes increase (maximized by the item above).

- There are No Minimum Order provisions (neither volume nor time) which permits Agencies to change vendors if service is in any respect unacceptable.

- The contract includes a 'market basket' to facilitate future additions of technological advances.

- There will be an annual contractor performance review, informed by Agency surveys, to insure high quality service.

- Open Enrollment may be possible after initial duration of contract to permit new vendors to participate.

- The initial contract will terminate on June 30, 2002. The Commonwealth may extend this contract beyond its initial term for up to eight (8) additional one (1) year periods.

- Schools and Libraries may participate in the E-Rate Program.

- The contract includes new local exchange and cellular services offerings.

For a complete look at the CNS RFR, go to <http://www.comm-pass.com> and search using "ITT09". This document will explain in detail the service levels and requirements winning vendors will provide to agencies.

OSD Update 01-14 (and its subsequent updates) is the primary resource for information about this contract including a list of winning vendors, the services they can sell under this contract, and the ceiling prices permitted.

ENTERPRISE COMMUNICATION SERVICES

VPN FOR REMOTE ACCESS

Preparations are completed for agencies to use Verizon's Virtual Private Networking (VPN) service for remote access to the Commonwealth's Massachusetts Access to Government Network (MAGNet). Verizon and the Information Technology Division (ITD) announced jointly the general availability of the VPN service for secure remote access at a Vendor conference on October 19, 2000. Many agencies are already planning roll-out projects to expand connectivity in their E-Government and Family Friendly initiatives.

David Lewis, Chief Information Officer (CIO), emphasized at the vendor conference that Verizon's VPN service was the Commonwealth standard for authenticated remote access. The Commonwealth's strategy is to use Verizon's VPN service to replace dial-in remote access servers (RAS) and close down the security risk of people connecting to MAGNet without authentication. Secure remote access is one of the key enabling technologies for the Cellucci-Swift Administration's E-Government and Family Friendly initiatives. Lewis also described his learning experiences as a member of the VPN Pilot team, and encouraged other participants to plan for a learning effort of their own.

Claudia Boldman, Senior Analyst in ITD's Strategic Planning Group described the policies relating to the roll-out of secure remote access at the conference. Security policies are posted at www.itd.state.ma.us. Carolyn Jussaume and Paul Flaherty, Verizon Account Managers, described the technology of the VPN service and the support services available to agencies. Additional information is at the Verizon web page www.bell-atl.com/largebiz/accounts/coma/. Daniel Harp, Senior Project Manager for the VPN Project, outlined some tips for agencies to use in planning their remote access roll-out using the VPN service, and Kevin P. Sullivan, Senior Procurement Specialist, gave a demonstration of how the VPN service can be used for telecommuting.

A highlight of Verizon's kick-off conference was a description by Steve Antonakes, Senior Deputy Commissioner of the Commonwealth's Division of Banks, of how Bank Examiners use the VPN for remote access to significantly improve the efficiency of bank examinations and banking operations oversight. VPN is used by the Bank Examiners to download bank examination files and upload evaluation reports, which shortens the time necessary to conduct an examination. Bank Examiners can reference an up-to-date Intranet site with current examination policies that replaces biweekly bulk mailings to all 119 Bank Examiners of all recent policy updates. Bank Examiners can use E-mail to consult each other on unusual bank examination questions much more easily than trying to locate each other for in-person telephone calls. And, Bank Examiners are learning Internet banking, important since over 50% of banks now offer on-line banking services. Bernard Waxman, IT Director for the Division of Banks, gave a live demonstration of several functions used by the Bank Examiners. This application of VPN for remote access can readily be applied to other agencies that have mobile field inspectors.

Todd Brown, Verizon Sales Executive, then outlined the next steps agencies can take to develop their roll-out of VPN for remote access. Agencies must decide several security and service delivery policies to meet their individual application needs. Should agencies require assistance in preparing their roll-out plans, consulting services are available from Verizon and ITD. Brown directed people to contact the Verizon Sales Account Manager, Carolyn Jussaume, at (617) 743-4607 or Carolyn.B.Jussaume@Verizon.com for additional information.

MASSMAIL

MassMail is the initiative to create a centralized mail system for state agencies. With ITD's leadership along with a consulting team from Microsoft the MassMail project is off to a great start.

A test environment has been built at the MITC Data Center. Production equipment and software has been ordered. In the near future a few Charter Agencies will prototype the Exchange 2000 application that is the backbone of the messaging system.

The work on MassMail has highlighted the value that Microsoft's Active Directory will bring to the Commonwealth's networking environment. Centralized directory services will be enabled for messaging and file and print services using Active Directory. The MassMail team had initially planned to focus on messaging and leave the design and implementation of file and print services to the agencies and their systems integrators. It became clear early on, that ITD needed to take the lead in making sure these designs and implementations happen in an organized and supportable fashion and include file and print into the foundation design.
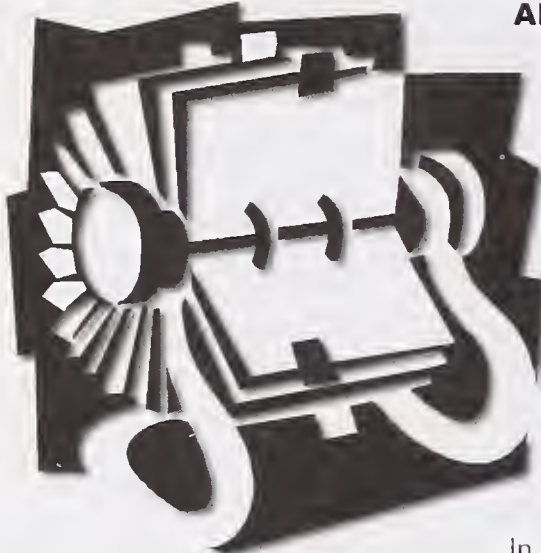
ITD has been greatly assisted by an Executive User Committee comprised of Secretariat Information Officers from Public Safety, Health and Human Services, Consumer Affairs, and Environmental Affairs, as well as by IT leaders from certain larger agencies such as DSS. This committee has given invaluable service in highlighting real world needs faced by agencies and by driving for solutions to those needs.

These inputs now fall upon a newly restructured MassMail Advisory Committee that has been formed to receive input from customer agencies and their business and to work together to solve issues and problems. From an ITD perspective the Advisory Committee includes a merger of operatives from Strategic Planning, eGovernment, Data Center, Networking and Application Development areas into one focused **MassMail and Active Directory** endeavor. In combination with the above mentioned inputs from Microsoft, the impacted agencies and the Executive User Committee, this newly enhanced Advisory Committee has taken charge of the highest level design, planning and execution strategies for the MassMail / Active Directory project.

Updates on the MassMail project are provided at the monthly IT User Group meetings and on the MassMail web site at http:// massmail.itd.state.ma.us .

ENTERPRISE COMMUNICATION SERVICES

ALL ABOUT DIRECTORIES

Imagine the distress of a fire department responding to an emergency call — without having a street directory or map to locate the house. Or using a reference book with an inadequate or inaccurate index. Or trying to locate a plumber, furniture upholsterer, lawyer, or local church without phone directories. More to the point: imagine trying to send e-mail with an empty directory.

In its simplest quasi-technical definition, a directory is a repository of entries. These entries are usually related to classes of objects, which in turn relate them to particular attributes. For example, a phone directory could be seen as a repository of people and business "objects" that contain "entries" of names that in turn have "attributes" such as addresses and phone numbers. Similar to the phone directory, e-mail directories contain people and business objects. These also have attributes like a phone directory, though usually in a different format, and perhaps more information. The organization, storage, and retrieval of entries may vary from directory to directory but the basic entry-object-attributes model stays constant. Many times, the same entry is contained within multiple directories. For example, most entries found in an e-mail directory are also contained in a phone directory.

Meta-directories have been promoted, for many years, as the solution to combining directories. Meta-directories are costly to implement, complicated to maintain, and usually fail to achieve full directory synchronization. The most common difficulty is in defining the mechanisms that relate entries in one directory with entries in a different directory. In many cases there is no apparent relationship. The technology being used to accomplish this matching has been termed "meta connectors". "Meta connections" can usually be successfully created although they may not always be complete or accurate. A significant work effort is required to engineer a solution that can gather and aggregate directory entries from multiple, independently designed, implemented, and managed, directories. The solution frequently produces a result containing less than all the useful information from the independent directories, thereby reducing the directory's usefulness.

What does all this mean to government in Massachusetts?

The "e-Government" initiative seeks to provide easy and comprehensive online access to a host of government services. Myriad Commonwealth services need to be identified and cataloged (e.g., service type, program names, contact information, phone numbers). Additionally, there are agencies providing these services that have similar information that will need cataloging (e.g., agency name, location, program names, contact information, and phone numbers). Looks like some kind of a directory would be useful.

The Commonwealth is a veteran user of directory technology especially at an enterprise level. Enterprise directory technology has been in use in Massachusetts state government for over ten years. There is a significant body of accumulated knowledge, expertise, and experience with directory technology through the use of solutions from proprietary solution providers (e.g., Banyan's StreetTalk, Novell's NDS) as well as from standards-based X.500 vendors (e.g., Control Data/Syntegra, DEC).

Microsoft is promoting its recently released Active Directory as having the potential to fill the function as the foundation directory for all directory services. And it is coming into the Commonwealth. Windows 2000 is released and widely available. Even though Windows 2000 can be run without implementing Active Directory, it remains that if an organization is Microsoft technologies-based, or wishes to implement Exchange 2000, they must implement Active Directory. It can reasonably be expected and has been confirmed by Microsoft that future releases of other Microsoft products will require Active Directory's presence as well. It is therefore inevitable that the Commonwealth will have yet another directory technology.

The Commonwealth needs to prepare now as an enterprise community, or risk a fragmentation of directories that could at a minimum preclude future enterprise application development, limit the objectives of the e-Government initiative, or potentially disrupt the Commonwealth's network infrastructure. A multi-agency, enterprise-level effort is underway to develop a comprehensive enterprise directory strategy for the Commonwealth.

The primary objective of this effort is to properly architect and position an Active Directory environment that reflects the Commonwealth's requirements, thereby preserving the Commonwealth's ability to leverage all directory technologies for future directory services especially those served by e-Government.

FIVE-YEAR CAPITAL SPENDING PLAN

As part of the Commonwealth's bond expenditure planning activities, the Information Technology Division (ITD) prepares and submits a spending plan each year describing planned information technology spending needs for the succeeding five-year period. This spending plan is generally governed by a spending "cap".
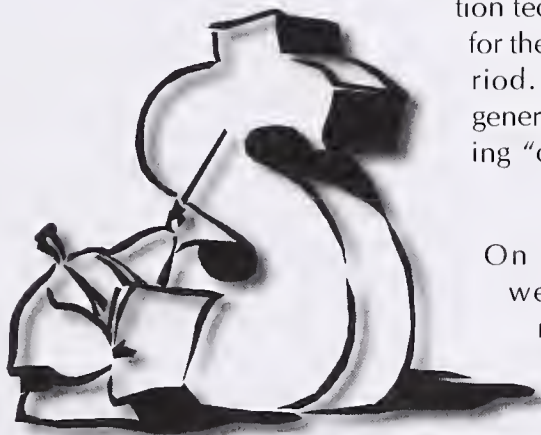
On an overall Commonwealth-wide basis, a maximum amount of planned funds to be borrowed each year is determined. This amount is referred to as the bond cap. The cap is portioned out to various agencies for use in planning their project activities each year. The ITD bond cap is generally $49M per year.

In the recent Investment Brief planning process, $700 million worth of projects were submitted for review and approval. These project costs are for more than one year, and funds other than IT bonds are employed to pay for parts of many projects. The planning process ITD used involves analyzing project outcomes, spending sources and the bond cap to lay out a plan that, over time, provides for funding and implementation of all projects with significant benefit to citizens, businesses or governmental operations.

In prior years, the gathering of project information and costs was a demanding and time-consuming process. Since the Investment Brief process was implemented this past spring, ITD's Strategic Planning Group (SPG) had a significant database of prioritized projects available upon which to build the five-year plan. This data base information was then combined with the Commonwealth CIO's strategic directions, as well as insights from secretariat and agency CIO's and other ANF executives, to develop a plan.

The early years (first two) years of the plan submission normally have detailed project descriptions, and the later three years are based more on general initiative information – such as E-Government or MassMail programs. In addition to the projects that can be funded within agency operating budgets, federal funds or IT Bond II cap limits, SPG also identifies programs which the CIO believes are essential, but whose financial requirements cannot be contained within current guidelines.

For example, the MMARS replacement system has an estimated two-year price of $40 million. Items such as MMARS are identified as "additional priorities", and ITD then works with the Fiscal Affairs Division (FAD) and various legislative committees to determine appropriate funding sources to meet these needs.

The total identified 5-year funding for the recently submitted plan was $476.7 million. Agencies with projects that should be included in future planning activities should contact the assigned SPG liaison as listed at www.state.ma.us/itd/spg/liaisons.htm.

For more information, please contact Ron Calabria at 617-626-4420 or at ronald.calabria@state.ma.us.

ITD RESOURCES

EAB CENTRAL SERVICE APPLICATIONS

With the focus on presenting a single point of entry for, as well as a single face to, their "customers", ITD's Enterprise Applications Bureau (EAB) plans to simplify how their systems need to interact behind the scenes. With speed to market becoming an increasingly important yardstick to measure the success of government applications, it is mandatory to share resources and reuse as much as possible. EAB's goal is to identify a variety of applications or components that can be built once but used by many e-government systems across the Commonwealth. EAB calls this their Central Services Applications initiative, a joint undertaking with the Strategic Planning Group within ITD and several key departments from across the Commonwealth.

Some examples currently under conceptual analysis include back-end credit card processing system that eases the settlement and reconciliation burden and enables easy interfacing to MMARS, and a central directory or repository of all business entities that do business with the Commonwealth. A central business repository may provide a mechanism for authentication and single sign-on, sharing more accurate information (what is that company's legal corporate name?) and many other functions yet to be determined. During this analysis phase, EAB is meeting with departments individually and in larger groups to gather ideas, determine the feasibility of these projects and devise a plan for building those central service applications that can provide the most value to the Commonwealth. For more information or to participate in any of the departmental meetings, please contact Anna dos Santos (anna.dossantos@state.ma.us) or Mark Heumann (mark.heumann@state.ma.us). Stay tuned for future updates on this exciting project.

SEARCH.STATE.MA.US

At the beginning of July, the state home page acquired a small but important addition: a search box. The deceptive simplicity of the search box masks a sophisticated search facility running on its own server at http://search.state.ma.us/.

Search.state.ma.us routinely checks all state agency websites on the Internet, regardless of physical location. It locates and indexes word processing, spreadsheet, and PDF files, as well as standard web pages. This information is all stored in a database with elaborate search software. The "intelligent" search software ensures that relevant URLs are presented with simple word or phrase queries, but also supports complex searches for those looking for more refined results.

EAB continues to work on improvements to search.state.ma.us. Behind the scenes, they have been working on improving result relevancy, for instance. They will be working on configurations to support searches within a specific agency, and then following up with documentation and guidance so agencies can make use of this feature. EAB also hopes to pursue strategies for storing perfected searches for popular queries.
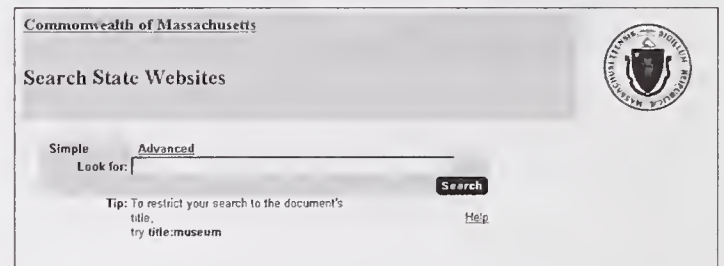
COMMBRIDGE UPDATE

COMMBRIDGE, the Commonwealth's standard for messaging between applications, continues to expand — currently there are 33 departments participating in 73 data exchanges. These interfaces each use one of 3 models or paradigms: Batch for file transfers; Real-Time for synchronous transaction messaging; and Deferred for asynchronous transaction messaging.

Recently CommBridge added two enhancements to assist department interoperability. CommBridge functions are now available in a Common Object Module (COM) allowing Windows and NT users more rapid deployment and ease of use. Additionally the ability to transfer binary data so that images can be sent between disparate operating systems was successfully tested.

Work with Public Safety agencies — specifically the Criminal History Systems Board, the Department of Correction, and the Registry of Motor Vehicles — continues. By the end of the year several real time and batch interfaces among those departments are expected to be operational.

ITD RESOURCES

DATA CENTER PREPARES FOR eGOVERNMENT

As the eGov Task Force does the planning for that initiative, ITD's Data Center at the Massachusetts Information Technology Center (MITC) in Chelsea is preparing to provide support for eGov efforts. Although there are a number of areas in need of beefing up, preparing the infrastructure is one of the most critical because it underlies many of the others.

To be ready to support online services offered 24 by 7, the Data Center must insure continuous availability. This will include having multiple generators to insure power and electrical feeds from two different power plants; redundant high-speed communications feeds from two different Central Offices; building and Data Center security; and computer room detections for fire, air and heat controls.

The keys to success are the employees who manage the environment. The data center is staffed 7/24, and the staff (Operations, Technical, and Database services) has a knowledge base that spans several hardware, operating system, and database platforms while the Data Security team protects access to the data.

Data storage includes: high availability devices with quick throughput; configurations that tie applications together; the ability to replicate databases for testing; and remote vaulting with the ability to move data from a local storage device to high-speed and high-density tape silos that will be located off-site in a secure environment. The capability will exist to back data up to tape without affecting the availability of the production systems, as well as the ability to back up centralized eGovernment servers located at alternate data centers.
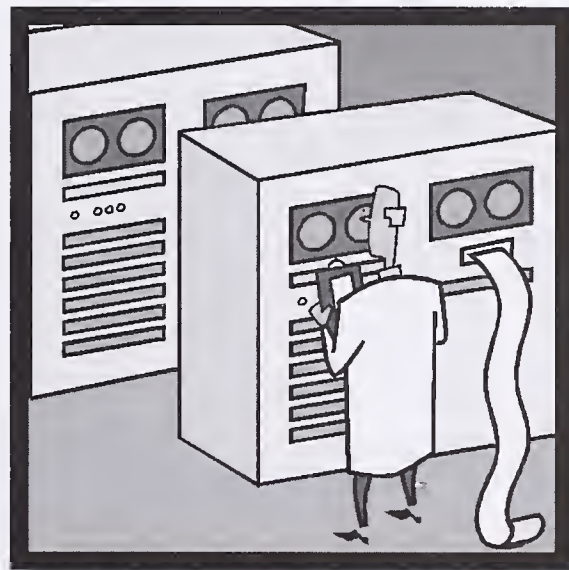
Providing 24 by 7 availability and redundancy will require another data center in addition to the Data Center at MITC and the server farm at One Ashburton, with a network that supports the connectivity between the three locations. The second data center will be developed with a configuration that will insure continuous availability.

The components described above will provide ITD and the Commonwealth with great flexibility in choosing platforms for agency and enterprise applications. Depending on the business requirements, customers will have options such as using the enterprise server, a standalone server, or a shared resource. Supported operating systems include OS/390 large enterprise (mainframe) servers that will be web enabled and accessible by TCP/IP, as well as UNIX and NT. ADABAS, Oracle, DB2 and SQL Server databases are available and supported.

The Data Center also has the ability to accept print files from remote locations to enable printing remote jobs on high speed printers.

In addition to providing very high availability with a variety of platform choices, the Data Center will enhance its resource management through automated monitoring and alerts. The continuous checking of the health of the hardware, operating systems, and databases will enable the Data Center to be more proactive and to anticipate problems before they occur.

INFORMATION TECHNOLOGY DIVISION

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A MESSAGE FROM THE CIO

The eGov initiative has begun. But it won't be until after the plan is formulated in January that the real work will
begin. As we participate in the planning effort, we should begin thinking about how to make it work.

The real promise of a Commonwealth of Massachusetts portal is that it be intentions or task based. What this
means is customers should only have to know what they want to do in terms they understand. So, if someone
needs a drivers license, they need not know it is the RMV they need to go to; or if they want a fishing license,
DFWELE is the responsible agency. To make that possible, each of us has to think of "us" as the Commonwealth
enterprise. This will be a huge challenge as we all currently view the enterprise as the agency we work for. We
have to set those viewpoints aside – or even break them down.

Some might view the eGov initiative as being about technology – because it will be implemented through tech-
nology. But this initiative is more about organization, collaboration and communication than it is about technology.
It's more about business strategy and changing business rules to accommodate an enterprise viewpoint.

It is going to be a huge challenge, but if it is done correctly, you will have participated in one of the largest
transformations that government has ever seen.

David Lewis